

THE CULTIVATOR:

A MONTHLY PUBLICATION, DEVOTED TO AGRICULTURE.

I KNOW OF NO PURSUIT IN WHICH MORE REAL AND IMPORTANT SERVICES CAN BE RENDERED TO ANY COUNTRY, THAN BY IMPROVING ITS AGRICULTURE.—Wash.

VOL. VI.

NO. 5, WASHINGTON-ST. ALBANY, N. Y. JULY, 1839.

No. 5.

Conducted by J. BUEL, of Albany.

TERMS.—ONE DOLLAR per annum, to be paid in advance. Subscriptions to commence with a volume.

Special Agents.—L. & R. HILL, Richmond, Va.; BELL & EATWELL, Alexandria, D. C.; GIDEON B. SMITH, Baltimore, Md.; JUDAH DOBSON, bookseller, D. LANDREITH, and M. S. POWELL, seedsmen, Philadelphia; ISRAEL POST, bookseller, 83 Bowery, ALEX. SMITH, seedsmen, P. WAKEMAN, office of the American Institute, Broadway, N. York; HOVEY & Co. Merchants' Row, Boston; ALEX. WALSH, Lansingburgh, and WM. THORNBURN, Albany, gratuitous agents. For general list of agents see No. 12, vol. v.

The Cultivator is subject to common newspaper postage. If the published volumes are for sale at the subscription price, or, if bound, the cost of binding added. The bound volumes may be also had of our Agents in the principal cities.

THE CULTIVATOR.

TO IMPROVE THE SOIL AND THE MIND.

The GREAT Business of our Country is Agriculture,—

1. Because it feeds us, and furnishes the materials for our clothing;
 2. Because it gives useful employment to five-sixths of our population;
 3. Because it is the primary source of our individual and national wealth;
 4. Because it is the nursing mother of our manufactures and commerce—neither could prosper or long exist, without it;
 5. Because it is essential to national independence.
- And hence it follows, as a corollary, and an implied duty, that we should give to this great branch of national industry, all the light, stimulus and reward which its importance demands.

We possess no statistical data of sufficient extent and accuracy to determine the amount of capital invested in our agriculture, the value of its products, the aggregate of its profits, and its consequent relative importance; yet we can form a tolerable estimate in these matters, by an examination of the agricultural statistics of Great Britain, which are furnished to our hand, and by then comparing her condition with our own. The following facts are gathered from a letter of James McQueen addressed to Lord Melbourne, on the subject of the corn laws.

AGRICULTURAL PROPERTY.

Great-Britain and Ireland.	Rental.	Value at 30 years purchase.
Land,.....	£63,395,684	£1,901,870,520
Residencies, proprietors, &c.,.....	5,000,000	150,000,000
Timber, produce yearly, ...	3,000,000	90,000,000
Land tax, 1834,	1,203,578	34,107,340
Yearly value of tithes,....	4,841,053	145,231,590
Poor rates, perpetual charge, exclusive of rent,.....	5,434,890	163,046,700
Mines, minerals & fisheries,.....	3,994,031	119,820,930
Property of proprietors,....	£85,665,658	£2,604,077,080

PRODUCE OF BRITISH AGRICULTURE.

Grain of all sorts,.....	£134,000,000
Potatoes,.....	20,000,000
Hay, grasses, turnips, straw,.....	120,300,000
Natural pasture,.....	63,502,000
Butchers' meat, pigs, poultry, game, rabbits, &c.,.....	82,283,759
Fisheries, food from,.....	12,000,000
Products of the dairy, vegetables & fruits, Allowed for consumption by farmers, in some articles not enumerated,.....	48,500,000
Wool, hops, seeds, flax, hemp and timber,.....	2,500,000
Mines, minerals, coals, &c.,.....	21,479,166
	33,970,276

Total produce of agriculture,..... £539,036,201
Equal to about \$2,000,000,000.

There are employed in these branches of productive labor, which the writer has classed all under agriculture, eighteen thousand families, which, at five and a half persons to each family, gives about ten millions of persons, or five million five hundred thousand effective men and women.

SUMMARY OF POWER EMPLOYED IN AGRICULTURE.

Direct human power, men and women,...	5,500,000
Horses, 1,609,176, each equal to 6 men,...	9,655,068
Oxen, 500,000, each equal to 5 men,.....	2,500,000

Total effective power direct,..... 17,655,000

CHARGES ON AGRICULTURE.

On fixed capital, lands, tithes, land tax, mines, fisheries, farm stock, &c.,.....	£108,993,468
Farm wages, cattle feed, &c.,.....	280,838,628
Tithes, church and highway rates, and labors in mines and fisheries,.....	42,228,748

Carried forward,..... £432,060,844

Brought forward,..... £432,060,844
Manures, bone dust, lime, wastage and replacing live stock, dead stock, &c.,..... 116,915,280

Charges on agriculture,..... £548,976,104
Deduct dead stock,..... 21,560,000

Total charges on agriculture,..... £527,416,104

SUMMARY—AGRICULTURE.

Total produce,..... £539,036,201
Total charges, rent at 3 per cent,..... 527,416,104

Farmers apparent profit,..... £11,620,097

The poor rates are paid as follows:

Property in land, and tax on houses and occupiers,..... £8,099,414
All other classes of property,..... 7,226,406

Total,..... £15,325,720
Deduct charges and allowances,.... 780,000

Nett produce,..... £14,545,580

MANUFACTURES.

The capital vested in, and charges on, the manufactures of the United Kingdom, are stated to amount, in the aggregate, to..... £205,773,872

And their total produce per annum, to.... 259,412,709

The total number of persons engaged in manufactures is stated at 8,200,000, one-half of which are effective men. These added to the steam power employed, give an aggregate power equal to 4,500,000 effective men.—With the addition that has recently been made to manufactures, the writer states the comparison as below.

	Capital.	Produce.
Agriculture,.....	£3,258,910,810	£539,036,201
Manufactures,.....	217,773,872	271,416,709

or 15 to 1 in capital, and double in produce, with this further superiority, that in the agricultural capital it is all fixed and real. Agriculture expends nothing abroad, while manufactures pay to foreigners £20,000,000 annually for raw materials.

COMMERCE.

The total exports for 1836, amounted,
To foreign countries, to..... £37,833,000
To her colonies, to..... 15,532,566

£53,368,566

Of these £12,425,605 (about \$54,000,000,) were to the United States, for which she received principally our public stocks in payment.

It appears from the preceding data, that the capital invested in British agriculture is fifteen times as great as that which is invested in British manufactures, although the latter excel in magnitude the manufactures of any other nation; that British agriculture pays most of the burthens of the government, supports a privileged clergy, and contributes more than thirty millions of dollars annually to her poor rates;—that its products exceed in value, more than fourteen times the whole amount of her exports to foreign countries, although her commerce exceeds in that of any other nation;—and that her agricultural capital is fixed, and abiding as her islands, while the capital vested in her commerce and manufactures is subject to many contingencies, which may impair or destroy it.

Now let us apply these facts to our own condition.—We will assume the population of both countries to be the same. Ten millions or one-half of her population are assigned to agriculture. With the collateral branches, as mines, fisheries, &c. which are classed under agriculture by Mr. McQueen, fifteen millions of our population may be assigned to this class. And the presumption is, that our agricultural capital and agricultural products, overbalance the capital and products of manufactures and commerce, as much, nay more, than they do in Great-Britain. From this view of the subject, it will be seen, that agriculture is really the GREAT business of this nation; that it is worthy of the most liberal patronage of our governments, state and national; that it ought to be enlightened, by a better education to the agricultural class; that it ought to be encouraged and patronized, by public bounties and rewards; that it ought to be respected, for its highly salutary influence upon our republican institutions, and upon the good order of society; and finally, that it ought to be honored, at least according to its intrinsic merits, that it may be more followed, by men who have minds, as well as hands, to accelerate its improvement.

We mean no disrespect, by these remarks, to the merchant or the manufacturer. We are not in the way of believing, that by attempting to raise one class, we sink the other classes. Manufactures and commerce are the hands and the legs, while agriculture is the body. They are reciprocally useful to each other. The body may sustain life without the limbs, but the limbs will perish

without the aliment which they derive from the body. But we believe the other classes have numerous and efficient advocates, who are able to take care, and who do take care of their interests; and that agriculture de-means herself, and compromises the best interests of the state, by her modest, passive, degrading acquiescence in total neglect. We wish to raise the agriculturists of our country to the condition which belongs to them—to that of intelligent, prosperous, high principled men—who know their rights and their duties, and will fearlessly assert the one and faithfully perform the other. Then will our agriculture be made to double and treble its products—to compete with the agriculture of other countries, and to supply all our wants; then will party interest be made to bend to the public good, and riot and outrage be made to give place to law and good order; then shall we truly become an independent nation, rich in all the elements of human happiness.—Even if we fail in all these fond anticipations, we can lose nothing by making the effort. We must be gainers in a less or greater degree.

Lawyers and Farmers.

We perceive by the news journals, that there were about one hundred attorneys and counsellors graduated or licensed, at the May term of the Supreme Court.—Assuming this to be the average number graduated at each term, the terms being four in a year, and counting only the number of attorneys, the annual accession to this corps must be two hundred! And these two hundred lawyers are to live and grow rich—how? By any branch of productive industry? by adding to the wealth, the quiet and the substantial enjoyments of society? We fear not. They must live by their profession, honestly if they can—but they must live; and with the law-making, law-dispensing, and fee-regulating powers virtually in their own hands, is it to be wondered, that litigation increases, that the delays of the law are multiplied, and the expenses of justice augmented? If one lawyer drains from the earnings of labor, two or three thousand dollars a year, what amount of these earnings will it require to support, in legal style, ten thousand lawyers? The answer, by the rule of three, would be twenty to thirty millions of dollars. Verily we may have too much of a good thing. Geo. Stevens, in his ingenious lecture upon heads, compares the law to fire or water,—a very good servant, but a very hard master; very useful and pleasant in moderate quantities, but extremely inconvenient and mischievous when in excess. We have seen in the print shops, a caricature, very illustrative of George Stevens' comparison—a portly, well dressed gentleman going to law—and a meagre, ragged skeleton of a man who had been to law.

We are by no means disposed to fault the young gentlemen who are thus crowding to the temple of the law, for fame and fortune, however we may lament the fatuity which impels them on. Law is the great avenue to office, to wealth, to distinction, to fashion—by common consent—and the fond mistaken parents are generally as sanguine in their anticipations of honor and distinction as the sons. There are many distinguished and eminent lawyers, useful and worthy members of society, and there are a great many who are quite otherwise, whose wants, rather than their wishes, lead very much to the increase of litigation—but who might have been useful members of the commonwealth, had they chosen a different and more suitable sphere of action.

Now, if agriculture held the rank which legitimately belongs to it in the social scale—if it had schools of instruction combining the useful with the agreeable, it is not improbable, that one-half of those who are annually crowding and burthening the legal profession, would become useful cultivators of the soil. What a vast improvement would this effect, in a few years, in the condition of our state—in its agriculture, the basis of its wealth, in the intellectual condition of its inhabitants, and in their moral and economical habits. Such schools, should they ever be established among us, either by the wisdom of the legislature, or the well directed efforts of individual patriotism, would soon annually scatter over the state, hundreds of young men, distinguished alike for strength of mind, vigor of constitution, and exemplary habits. These would carry with them a practical knowledge of the best modes of farming, the best implements, the best seeds, the best fruits, and the best breeds of animals; and each in his future sphere of action, would become a living proof, to those around him, of the practicability of improving our agriculture, and an example to them of good habits and good management. Wherever we find a good farmer, we see the benefits of his example in most of those around him, which diminishes as we recede. Were the good farmers multiplied at the rate of four or eight hundred a year, as they might be through the influence of schools of practical and scientific agriculture, the advantages to the state would be incalculably great.

We take this occasion to apologize for the caption—"Privileged Classes"—which was inadvertently placed

over an editorial article in our May number, as liable to a construction which we did not intend to give it.—We are not agrarian in our opinions. We consider all professions open to free competition, and as useful, when limited in their sphere and numbers. If there is a privileged class in our community, it is the intelligent, independent tillers of the soil; not that they are privileged by law, or by popular favor—but that they are privileged by their Creator, in the enjoyment of a greater share of temporal blessings, the natural result of sober, industrious and contented habits—than perhaps any other class in the community. Our wish is to see them intelligent and independent, that they may enjoy the reward, and the state the benefit. We ask for them no exclusive public encouragement or bounty; but merely some of the crumbs which fall from the public table, and which have heretofore, at least in some instances, been lavishly, if not wickedly, squandered upon far less worthy objects. We wish to see agriculture brought forward from the shade, from the back ground, where it has been too long obscured and degraded by ignorance and servile apathy—and to see the public bounty, like the sun and the rains, which fructify the earth and cause it to bring forth food for man, dispensed alike to all classes of the community.

Geological Report.

We resume our notice of this report, and of Dr. Beck's communication.

Iron—The northern and southern sections of the state abound in this metal.

"While at the north we have the immense beds of the magnetic oxide, at Newcomb, in Essex county, one of which is described by Mr. Hall, as being more than a mile in length, and more than five hundred feet in breadth, besides others of less magnitude in various parts of the same county, and in those of Clinton and Franklin, and the beds of specular iron ore in St. Lawrence; we have at the south the vast deposits of magnetic oxide in Orange county, and of hematite in the county of Dutchess."

Iron ores also occur in Columbia, Rockland, Richmond and Washington.

Manganese is found in Lewis, Essex, Westchester, Columbia and Dutchess, and especially in the two latter counties, the quantities that could be obtained, at very little expense, are estimated by Prof. Mather, at 50,000 tons, worth, if carefully prepared, \$20 per ton, or \$1,000,000. The oxide of manganese is extensively used in the preparation of chlorine for bleaching, and in the manufacture of glass.

Lead is found in Columbia, Lewis, St. Lawrence, Ulster and Sullivan.

The next communication in the report, is from T. A. Conrad, on the Paleontological Department of the survey. As this would interest but few of our readers, we pass to

PROF. MATHER'S REPORT.

On the economical geology of New-York, Westchester, Putnam, Rockland and Orange, comprising the first district, with two supplemental reports, from Drs. Horton and Gale, on the descriptive geology of Orange and New-York. The counties lying east of the Hudson, and those on the west border, are considered separately.

The sources of mineral riches in this district are very great, and are being made subservient to profit, and their advantages are susceptible of very great extension.

The counties of Rockland and Orange are classed under four divisions, in regard to aspect and agricultural features, and mineral products. "They are the mountainous region called the Highlands, and composed of primitive rocks; the slate and graywacke regions of Orange county, the red sandstone and the trap of Rockland county." On the eastern shore of the Hudson, the soil is more similar, being "derived from the disintegration of the contiguous rocks, and of the pebbles and boulders of materials transported from a greater or less distance from the N. N. W. by some natural causes." They contain all the mineral elements of fertility; while the extensive salt marshes and mud flats, on the coast, and the bog meadows of the interior, furnish abundance of the vegetable elements—so that it would seem, that if those elements were duly mixed and managed, the soil might be rendered highly productive. The same remark will apply to many districts of our country.—The admixture of earthy matters, which, where wanted, are generally found in contiguity with each other; the vegetable matters which abound in our swamps and marshes; the marl, lime and gypsum which are scattered over our state, for the transporting of which we have every facility; and the animal manures of our farm stock, afford abundant materials for increasing and perpetuating the fertility and productiveness of the soil, and of multiplying the comforts and enjoyments of our population. We lack only the knowledge and the industry necessary properly to combine and to develop the elements of wealth and happiness which are scattered around us, designed for our use.

Independent of the great means which these counties afford, of increasing and perpetuating the fertility of the soil, their other mineral sources of wealth are far greater, we believe, than our readers are aware of.—We will briefly notice some of the most prominent. And first,

Peat—Great tracts of this are found in the eastern counties, which are coming into use, and may be mostly employed as fuel—that on the borders of the river being more fibrous and inferior to that which occurs in the interior. The Professor estimates the quantity in the three eastern counties, New-York, Westchester and

Putnam, at 2,000,000 of cords on the border of the river, and 1,160,000 cords in the interior. Considered in reference to its fertilizing properties in the soil, the value of this vegetable material will be immense. The drowned land tract, in Orange, which comprises some thousand acres, is a bed of peat from three feet to several yards in depth, the number of cords not estimated.—This has proved, on trial, a good fuel. The total cords of peat, however, in Orange and Rockland, is put down at 26,140,000 cords, or 72,000,000 chaldrons. It costs, for digging, curing and marketing, \$1.25 per chaldron, and sells in New-York, at \$3, leaving \$1.75 profit to the proprietor.

Clay is extensively employed as a means of creating wealth, in the manufacture of brick. The extent of this business will appear from the following estimate of the number annually made in each county.

In Westchester,.....	38,700,000
In Putnam,.....	3,200,000
In Rockland,.....	12,000,000
In Orange,.....	9,760,000
	63,660,000

There is employed in this business a vast capital, and a great number of laborers, both in the manufacture and transportation. At \$5 per thousand, the income from this manufacture would amount to \$318,300 per annum. And if we add to this estimate, the bricks manufactured in Dutchess, Columbia, Rensselaer, Albany, Greene and Ulster, the amount earned in this branch of industry will exceed a million of dollars per annum.

The clays of these counties are also used in coarse pottery. They are used, too, to a limited extent, to improve the texture and quality of light lands; a use to which they are admirably adapted as we have found by experience, when they contain, as the blue and gray kinds generally do, a portion of carbonate of lime.

Marl has not yet been found in any considerable quantities, either in the counties of New-York, Westchester or Putnam; but it is found in almost every town in the county of Orange, where it either lies naked, or is covered by water, or bog earth or peat. In the few experiments which have been made of this material, as a fertilizer of the soil, we are sorry to see the professor remark, its effects have generally been unfavorable.—His impression is, that too much has been applied, whereby vegetation has been as much prejudiced as if too much quick lime had been applied. A case is cited where marl was applied twenty-nine years ago. Nothing would grow on the field for many years; but latterly corn and wheat have grown well, and yielded bountifully. Too much calcareous matter is as prejudicial to vegetation, as too much sand or too much clay. There are entire districts rendered infertile in the south, by the too great portion of carbonate of lime with which the soil abounds. Two per cent of the tillable stratum, of calcareous earth, suffices for all the useful purposes of vegetation, though twelve per cent, we believe, has not proved hurtful. Soils may naturally contain enough of this earth. Marls differ in the quantity of calcareous matter which they contain, and there is often blended in their composition matters that are prejudicial to healthful vegetation. It is prudent, therefore, to experiment with them on a small scale, till their properties, and those of the soil, are well ascertained, and then to apply them on a larger scale, in the proportions, and in the manner, found to be most serviceable. It would be well to experiment with them as a top dressing upon meadows or pastures, by which they would be deprived of their deleterious properties, and thereby become fitted to improve the soil, after the lapse of a year or years, when they are ploughed under. There is not a doubt but marls are calculated to impart fertility to all soils which are naturally deficient in calcareous matters. We want their analysis, and that of the soils, to know where and how, and in what quantities, to apply them to advantage.

Gypsum—Although none has been found in this district, the annual amount paid for it in Orange alone, is estimated to cost more than \$41,000.

Limestone abounds in all the counties of this district, and is extensively wrought as an article of commerce. The Professor is in the habit of estimating the profit of the lime and other stone quarries, provided the material was all marketed. In this way he states the net value of a limestone quarry in Westchester, estimating it at \$1.50 per barrel, at about \$34,000. This is something in the manner of the milk-maid who counted her chickens before they were hatched, or of the speculator in western lands, who foots his profits before he has sold out, or got his pay. The lime of these counties, however, without looking to their ultimate value, affords the material for a profitable commerce, as a building material, and which will no doubt come into use extensively as a fertilizer of the soil, for which purpose it is already partially employed.

The new mode of burning limestone, with the aid of anthracite coal, and in perpetual kilns, as already noticed, from Dr. Beck's report, is one of great economy, and which promises ultimately to reduce the price of this necessary article, especially upon navigable waters. The expense of quarrying the stone, at one of the localities, is estimated at nine cents per barrel, that of the coal at 25 cents per barrel, and the price of the lime in market at \$1.50; thus giving, after deducting every expense, including teams, attendance, freight, casks and cooage, a net profit of 53 cents per barrel. The amount of lime burnt in Orange county last year, is estimated by Dr. Horton, at 182,650 bushels.

Granite, and much of good quality as a building material, and convenient for water transportation, is found in all the counties of this geological district. Several quarries are already opened and profitably wrought, and many localities of great extent, are pointed out, and estimated upon, by the geologist.

"It is estimated," says the report, "that several millions of dollars are annually paid out of the city of New-York, and the towns on the Hudson river, for building stone, brought from beyond the limits of the state, while we have within our own boundaries, and near our markets, inexhaustible supplies, of equally good quality, which can be quarried, shipped and hauled, at less expense than the stone we now import from Maine, New-Hampshire, Massachusetts and Connecticut. The granites of the Hudson river must, then, soon be wrought and sent to market, and the quarries will become very valuable."

Gneis abounds in most parts of this district. Several quarries are noticed, lying on the banks of and contiguous to the Hudson river, and many other localities are indicated. This stone is extensively employed in the Croton aqueduct, in the construction of bridges, aqueducts, &c.

We omit a notice of other rocks, and of the metallic ores, which are found in this district, which are numerous, and the quantity, particularly of iron, very extensive—one locality, or vein, being computed to contain 5,600,000 tons of iron. The red sand stone is worked to a great extent in Rockland, where there are thirty-one quarries wrought, and which yielded last year 62,000 feet of slabs, valued, with the rubble, at \$18,987.

Silk Companies.

We have lately had sent to us, a prospectus of the New-York and Long-Island Silk Growing and Manufacturing Company, capital \$60,000. We are in the main opposed to all joint stock companies, for any object that comes within the reach of individual means and enterprise, and particularly such as are likely to conflict with household industry, like those which associate for the culture of the mulberry and the tending of silk worms. This we consider legitimately a family business, and one which ought to be encouraged as such. The organization of joint stock companies for the carrying on of a business which the most humble farmer has the means of profitably conducting, leads to the impression, that great capital or great skill is required in the business, and that individuals cannot compete with companies; and thereby deters hundreds and thousands from entering into a business which could be managed by them with great pecuniary advantage. We do not think that corporate bodies should be created merely for the individual profit of the stockholders—but that the public interest—the interest of the many, is the only justifiable ground for granting corporate privileges.

But the New-York and Long-Island company, if we are rightly apprised of their plan, forms an exception to our remarks. The company, we understand, have purchased a farm on Long Island, three miles from N. York, which they have planted, and intend to plant, with mulberry trees, for the purpose of manufacturing silk; and they design to have the business of picking the leaves, tending the worms, &c. managed by poor widows and fatherless children from the great city.—Plain cheap cottages are to be erected for these widows, with small gardens attached, to occupy their leisure time, and furnish subsistence. In this way, capital will be usefully employed, to promote industry in the young, afford profitable employment to the indigent, profit to the stockholders, and benefit to the public at large.—Under this view of the subject, we commend this stock to the notice of capitalists, as affording a safe, meritorious, and we think profitable investment.

Mr. Colman's Second Report.

The second report of Mr. Colman, on the agriculture of Massachusetts, is principally devoted to a survey of the county of Berkshire, which lies upon the eastern border of our state, though it embraces much other incidental and interesting matter. As the report comprises 200 8vo. pages, we are necessarily restricted to an outline of its most important matter.

Berkshire county is more than 50 miles long, and has an average breadth of about 20 miles, and a population of nearly 40,000. About one-half of the county is improved, say 207,000 acres, of which 117,000 acres are pasture, 27,000 tillage, and the residue in meadow or mowing. It is of course a grazing district; its dairies are extensive, and its flocks of sheep numerous.

The surface of the county is broken and mountainous; but it is everywhere intersected by rich valleys, and fine streams of water, which afford numerous mill sites, which are extensively improved for hydraulic purposes. The soil in the valleys is generally rich and productive, and the hills and mountains yield excellent grass and pasture. The inhabitants are intelligent, enterprising and prosperous. The crops are those usually cultivated in our latitude; and the produce of the soil is generally consumed by its population—the products of the dairy, cattle, and manufactured goods forming its principal articles of export.

The return of crops does not generally indicate a high state of tillage husbandry, though in some cases the yield is bountiful. Oats, potatoes and ruta bage seem to make the best returns, though corn has, in many cases, given a great crop, and in one case as high as 110 bushels. Some crops of potatoes have gone to 500 and 560 bushels, and the ruta bage as high as 1,200 or 1,300 bushels. But the average returns are less than half of

these quantities. These great products serve, however, to show what can be done, and what will more generally be done, under an improved state of husbandry, when bad farmers can be persuaded, or taught, to imitate the good ones.

The common rotation is stated to be, corn or potatoes, generally manured; then oats; third crop wheat or other grain, with grass seeds. The value of clover does not seem to be appreciated, as an alternating crop, or as a fertilizer of the soil, as we do not find it mentioned under rotation of crops. We would barely remark, that three exhausting crops in succession is not considered an indication of good husbandry. Twenty-three pages of the report are principally taken up with statements of expenses and profits of crops. The footings indicate, that the profit has been greatest on ruta bage, and that potatoes and corn are next in value; and generally, the profit is in proportion to the expense—the greatest outlay making the most profitable return. A case is quoted, where 40 bushels of wheat were taken from an acre, which had been planted, the preceding year, with corn upon greensward; and the great product is ascribed to the fact, that the ploughing for the wheat was superficial, leaving the decomposing sod still below, where the roots of the wheat would want and seek for it, and where it would escape the wasting influence of the sun and atmosphere. This mode of economizing the vegetable matter of the sod was strongly inculcated by the late John Lorrain, and has been frequently recommended in the Cultivator.

A practice is mentioned, of alternating corn and potatoes in the same row. The corn is planted 3 feet 6 inches apart, and a hill of potatoes between every two hills of corn. In this way the cultivator thinks he gets 150 bushels of potatoes on an acre, without materially diminishing his corn crop. We are inclined to think, that the better practice is to alternate corn and potato rows, two of each, or one of potatoes and two of corn. The corn is undoubtedly benefitted by the exposure, which is here had, to light, heat and air, while the shade of the corn does but little prejudice to the potatoe crop. Such was the practice of Lorrain, and such has been the practice of others, with undoubted advantage.

DAIRY HUSBANDRY.

This is a great dairy county, the quantity of butter and cheese made is large, and the quality good. The annual keep of a cow is estimated at about \$20, and her products, in calf, cheese, butter and pork, is from 30 to 50 dollars, leaving a profit for attention of 15 to 30 dollars, according to the goodness of the cow and the goodness of her keep. Extra feed, judiciously dispensed, is always profitably applied to milk cows, as the extra food is almost wholly converted into milk. Thus a herd of 20 cows gives to the dairyman a mean average profit of at least \$400. Three acres of pasture are allowed to a cow. On 22 farms in the town of Cheshire, there are kept 414 cows, which gave in 1837-8 the following produce:

New milk cheese,.....	300,000 lbs.
Skim do	11,050 "
Butter sold,	311,000 lbs.
	19,050 "

We quote the case of an individual farmer in this town, as evidence of the profits of dairy husbandry, and as a notable example of the reward of persevering and honest industry, and of rural comfort and independence.

"This farmer," says the report, "has now a dairy of 24 cows, and they produce a cheese per day, weighing about 100 lbs. Supposing that it requires but a gallon of milk to produce one pound of cheese, this would give 400 quarts of milk per day, or at the rate of 16½ to a cow. These cows are all of native stock; most of them raised by himself. His average product of new milk cheese to a cow, in a season, is perhaps between 500 and 600 lbs. Last year the actual yield was 598 lbs. to a cow. Of his 24 cows last year, two were heifers of two years old. Four years since, he was the owner of a cow, whose milk, in the best season, amounted, by actual weight, to 70 lbs. a day. During the time of her greatest yield, she was fed with four pails of cheese whey, and some rye meal. She was of native stock. This farmer has a heifer from her, which gives 60 lbs. of milk per day. He prefers heifers to 'come in' at two years old. Their milking properties are in this way improved."

"The establishment of this farmer," continues the report, "is substantial and independent. As far as the common comforts of life are concerned, little more seems to be desired. Good air, good water, plenty of bread, plenty of fuel, plain and substantial clothing made by the hands of his own family, and the product in a great measure of their own flocks and fields; an estate which he can call his own with truth; because it has been purchased not by fraudulent speculation upon other people's earnings, but by the healthful toil of his own muscles, and the sweat of his own brow; luxuriant pastures filled with those beneficent animals, who are nourished by his kindness, and settle their bills in the most honorable manner every night and morning; and a clean dairy room of ample dimensions, and exemplary neatness, with its numerous shelves, loaded with the richest produce, and speaking as well for the in-door as the out-door management; these features combined in this picture present one of those beautiful examples of rural independence, and the bountiful rewards with which Providence is pleased to crown industry, frugality and good management, with which I am happy to say the county of Berkshire is everywhere sprinkled over, even on its high mountain summits, as well as on its fertile alluvions, and its peaceful and secluded valleys. The independent proprietor of this establishment is now sixty-six years old. At the age of nineteen he was not the owner of a dollar. He now admits himself worth thirty thousand dollars; and all this, with the exception of less than fifteen hundred dollars, is the produce of his own farming industry, as he has never engaged in any speculation whatever. A higher good than all of this is found, in the fact which he added with an honest pride and enviable pleasure, that he had

brought up eight children in the habits of honest industry; and not one of them had ever disgraced his parents.

"The standard of dollars and cents is a very imperfect standard, by which to measure the prosperity of such a man. It is a prosperity flowing from deeper, purer and more enduring sources; from a competency for the evening of life, earned by honest labor; a mind unembarrassed by the fear of want and the vexatious caprices of trade and speculation; and a grateful sense of the kindness of that just and beneficent Providence, whose blessings have rendered his peaceful and unpretending labors successful."

The North Devon cattle are said to prevail generally throughout New-England, though in the main, we suspect they have degenerated from want of attention in breeding from select animals, and by crossing with the long-horns. Some of the cows possess uncommon properties for milk, and if these were carefully crossed with approved bulls of a good milk breed, we have little doubt, but the progeny would soon be in high reputation, as dairy stock, rivalling, perhaps, for this purpose, any breed which we are importing at vast expense from the other side of the Atlantic. Some of the cows noted in the report, have given from 200 to 300 lbs. and one as high as 425 lbs. of butter in a year. Such a cow is worth more, for the profits of the dairy, than ten poor milkers, and her stock ought to be sedulously preserved.

The commissioner here introduces a notice of Mr. Jaques' Cream-Pot breed, an eminent farmer and breeder, at the Ten Hill stock farm, near Boston. Mr. Jaques obtained a remarkable cow, by a cross of the Durham upon native breed, which gave him nine pounds of butter in three days; and from this beginning has sprung his Cream-Pot breed, the cream of some of which gives 80 per cent of butter. Mr. J. has 40 cows and heifers, and 10 bulls of this breed. Their good properties do not consist so much in the quantity of milk they yield, as in its richness. We have found that while the milk of one of our cows gave but nine per cent of cream, the milk of another, at the same time, and upon the same feed, gave fifteen per cent of cream. The quality of a cow's milk does not receive that attention which it merits, in our estimate of dairy cows. We have half a dozen cows, which we esteem superior milkers, and superior in form and appearance, which we have bred from an individual cow, and put to good bulls. If farmers would carefully breed from the best milkers, they would be able to make within themselves, in a few years, a vast improvement in their dairy stock.

The properties to be sought for in neat cattle, differ somewhat according to the purpose for which they are wanted—whether for the pail, the draft, or fattening. And these three properties are very seldom, if ever, found united in a single individual. A cow that takes on flesh rapidly, when in milk, cannot be expected to be a deep milker, unless she is very highly fed. Her food cannot be expected to be converted into both meat and milk; and as the disposition to the one or the other preponderates, so the other must decline. The Herefords, a branch of the Devons, which combine much of the quickness of the Devons in the yoke, with the size and strength of the long horns, and which very much resemble, in size and strength the best working oxen in New-England, and of Madison and other hilly counties of our state, are considered light milkers; and yet they afford probably the best working oxen, and if not the most, are certainly a very profitable stock to feed for the butcher. Of the seven principal prizes awarded at the last Smithfield (London) show of fat cattle, the Herefords carried off five prizes, the Devons one and the short horns one. The first animals of pure Herefords which have fallen under our notice, were a young bull and heifer lately imported, and now owned by our neighbor C. N. Bement.

For the dairy, a general preference is given, says the commissioner, to the common native stock of the country, in which the Devon blood predominates; but such are not preferred as breeders of other but dairy stock. Mr. Coleman quotes from English authority the following statement of the proportion of butter to milk, drawn promiscuously from six different short horns; the milk was one quart in each case.

No. 1 gave 3oz. 6dw. No. 4, 1oz. 10dw.	
2 " 1 " 6 " 5, 1 " 14 "	
3 " 1 " 12 " 6, 1 " 6 "	

Thus showing, that one quart of one cow's milk gave nearly as much butter as three quarts of another cow's milk. The lactometer affords a ready means of determining the relative proportions of cream afforded by the different cows: but then, to show an accurate result, the milk should all be taken alike, that is, from the first or last that is drawn from the udder at a milking,—for the two samples differ very greatly in their quality—the first drawn being very deficient in nutritious properties, sometimes one or two hundred per cent, to the stripplings. The lactometer is a glass tube, sold by seedsmen, and sometimes by apothecaries, graduated into 100 parts. The milk is put into this, and having had time to rise, the per cent of cream upon the top is ascertained by holding the glass up to the light.

Mr. Colman gives one case in which an experiment was made in soiling a small herd of cows, the cows were kept wholly in the stable, and fed wholly with green cut food. The result was, three gave 389 pounds of butter in 13 weeks, lacking one of being 30 lbs. a week, or 10 pounds a week to each cow. We think a half-soiling system, which affords the cows a range and exercise in the day time, and extra green food at night, is the preferable mode. When the pasture is short or deficient, an extra feed of cut grass at night, adds greatly to the milk, and is a very profitable mode of appropriating a

lucern or clover field. We have in this way kept half a dozen cows upon an acre of lucern most of the season. The cows had a run of four or five acres of pasture, and were fed night and morning with as much cut lucern as they would eat up clean. When the acre had been cut over, the ground first cut was in condition for a second cutting.

The commissioner recommends more attention to the raising of calves, by dairy farmers, not only to perpetuate and improve the dairy breed, but as a matter of pecuniary profit; and he cites cases of prime heifers, two years old, bringing with their first calf thirty-five dollars. But the commissioner recommends that which, if commendable, we doubt if it will be carried into effect by farmers generally, viz: that it is best to raise calves in the stall or yard the first season, where they are to be fed with hay, carrots and potatoes cut fine. These roots are scarce at the season of rearing calves, the expense of rearing is increased, and besides, we think the animals are deprived of the exercise of their natural habits—free exercise in the open air, and feeding upon the fresh herbage, destined to become their principal food. Good pasture will keep early calves in a growing healthy condition after they are 12 or 16 weeks old; and we should consider it better, if it is designed to make a superior animal, to give extra feed with the natural food, than to depend wholly upon what may be termed artificial.

In dairy management, the report recommends perfect cleanliness, a pure air in the milk-room, and the churning of cream while fresh, as having a great influence in the quality of the product. Two important suggestions are here omitted; the first is, that after the preceding requisites have been duly observed, still that the quality of the butter will depend much upon the temperature of the cream when submitted to the operation of churning. It has been demonstrated by repeated experiments, that the cream ought to be of a temperature between 56 and 62° of Fahrenheit; that if it is below this, the process of churning becomes more tedious, and the butter of but second quality; and that, as the temperature rises above 62, the butter becomes white, frothy and inferior. In the second place, unless the butter milk is completely extracted, and the salt dissolved and incorporated with the butter, before it is packed down, and air afterwards excluded from the mass, it will not keep good, though it be good when laid down.

Mr. Colman recommends the cheese shelves figured and described in our second volume, which are suspended on a horizontal central bar, and upon which many cheeses may be turned by a boy in one operation.

The swine of Berkshire are not highly recommended; although pork is one of the staple products of a dairy district. The Byfield, China, Mocha, grass breed, and Berkshire have been partially introduced. Mr. C. says the Berkshire "is the best hog we have among us." One hog is generally kept to four cows. A shoat weighing 70 lbs. in the spring is made to weigh 250 lbs. in the fall, upon the slops of the dairy of four cows.

A successful pork fatter is noticed whose process of fattening is described as follows:

"As soon as the pasture will afford a good bite of grass, he turns them in where they can have plenty of clover and water. He is careful to salt them once a week, if the season is wet, and changes them from one pasture to another, as he does sheep or other stock, which is of much importance during the summer. As soon as he gathers his harvest, he gives them the stubbles. When these are well gleaned, he gives them corn cut up by the ground for a few days, as it is dangerous to keep them closely shut up and feed them highly in the beginning; having no exercise it tends to produce the blind staggers. In order to remedy this, they must be put upon thin food and have as much salt as they will eat. He commences steaming potatoes for his hogs the first of October, his ruta bage not being then matured; he mashes them fine, puts nothing with them but the sour milk from six cows, and four quarts of salt to a box of 28 bushels. This feed he continues three weeks. Afterwards he commences steaming ruta bage, and continues this feed until the first of December, which is five weeks. He puts with the ruta bage, after being mashed fine, four quarts of salt, and three bushels of oats and peas ground together, into a box of 28 bushels. On this feed they do extremely well. This feed he continues till the 25th December, and then finishes off with meal and corn."

In this way he makes his hogs, the age is not mentioned, average over 300 lbs. There are three facts worth noticing in this mode of fattening swine, in general, we believe, not sufficiently regarded or practised, and which evidently add materially to the profits of the business.

1. Good clover pasture, and a change of pasture, incontestably beneficial to all other farm stock.

2. A constant and plentiful supply of salt—as essential to the digestive functions and health of the brute as it is to the health and appetite of man. And,

3. The economy of fattening upon roots. Potatoes, to be sure, have long been in use as hog feed; but the use of ruta bage can hardly be said to have commenced with us. These, beets, carrots and parsnips, are believed to be all as nutritious, and as profitably cultivated for swine, as the potato. Our pork may be almost wholly made from the slops of the dairy, clover, roots and apples, with far greater economy than it can be made from corn or other grain; and the more improved mode is now, to give corn and grain only during the last weeks of the fattening process.

We intend to resume the review of this report in our next.

Criteria of Dairy Stock.

We copy from the Farmers' Magazine, the following scale of points of Jersey dairy stock, which has special

reference to the producing butter and milk, but is not designed to apply to cattle for draught or fattening.

SCALE OF POINTS FOR BULLS.	
ART. I. Purity of breed on male and female sides, reputed for having produced rich and yellow butter,.....	4
II. Head fine and tapering, cheek small, muzzle fine, and encircled with white, nostril high and open, horns polished, crumpled, not too thick at the base, and tapering, tipped with black, ears small, of an orange colour within, eye full and lively,.....	8
III. Neck fine, and lightly placed on the shoulders, chest broad, barrel hooped and deep, well ribbed home to the hips,.....	3
IV. Back straight from the withers to the setting on of the tail, at right angles to the tail. Tail fine, hanging two inches below the hock,.....	3
V. Hide thin and moveable, mellow, well covered with a fine soft hair of a good colour,.....	3
VI. Fore arm large and powerful, legs short and straight, swelling and full above the knee, and fine below it,.....	2
VII. Hind quarters, from the huckle to the point of the rump, long and well filled up; the legs not to cross behind in walking,.....	2
VIII. Growth,.....	1
IX. General appearance,.....	2

Perfection,..... 28
No prize to be awarded to a bull having less than 20 points.

SCALE OF POINTS FOR COWS AND HEIFERS.	
ART. I. Breed, on male and female sides, reputed for producing rich and yellow butter,.....	4
II. Head small, fine and tapering, eye full and lively, muzzle fine and encircled with white, horns polished and a little crumpled, tipped with black, ears small, of an orange colour within,.....	8
III. Back straight from the withers to the setting on of the tail, chest deep and nearly of a line with the belly,.....	2
IV. Hide thin, moveable, but not too loose, well covered with fine and short hair of good colour,.....	2
V. Barrel hooped and deep, well ribbed home, having but little space between the ribs and hips, tail fine, hanging two inches below the hock,.....	5
VI. Fore legs straight and fine, thighs full and long, close together when viewed from behind; hind legs short, and bones rather fine; hoof small, hind legs not to cross in walking,.....	2
VII. Udder full, well up behind; teats square and largely placed, being wide apart; milk veins large and swelling,.....	4
VIII. Growth,.....	1
IX. General appearance,.....	2

Perfection for cows,..... 30
Two points shall be deducted for the number required for the perfection of heifers, as their udders and milk veins cannot be fully disclosed.
No prize shall be awarded to cows having less than 21 or to heifers having less than 19 points.

Portable Manures.

This is a term given in England to what we call concentrated manures, that is, bone dust, horn shavings, poudrette, urette, &c. They are probably there called portable, for the reason, that they may be transported a distance at one-tenth, or even one-twentieth of the expense that their equivalent of stable manure could be transported. Hence they are in great demand, in Great-Britain; and the quantity used may be judged of from the fact, that that country is now paying annually, £200,000 to foreign countries, equal to \$888,000, for bones to fertilize her lands; while the high price of the article has led to the most careful collection of them in every part of the United Kingdom. In 1827, Mr. Huskinson gave it as his opinion, in the House of Commons, that the use of bone dust, in British husbandry, occasioned an additional produce of 500,000 quarters of corn, (four millions of bushels,) and the writer in the Irish Farmers' Magazine, who states the facts we are narrating, adds, "it is not too much to suppose, that the quantity has since been increased four fold;" that is, that the use of bone dust in British husbandry is now annually adding sixteen millions of bushels of grain to her agricultural products! What a lesson this for our farmers, who are exhausting the patrimony which Providence gave for coming generations!

"The most active ingredients in bone dust," says the writer to whom we refer, "are phosphoric acid and ammonia, combined with lime and carbon; and it is to the action of these upon each other, and the influences of the changes of the atmosphere, and of sun shine and rain, in producing and maintaining that action, both above and in the ground, that is to be attributed the extraordinary results attending the application of bone dust."

The writer then proceeds to say, that a portable manure may be prepared, very easily, and at little expense, in every farm yard, which shall contain the elements which enrich and stimulate the soil to the highest pitch of fertility. The ingredients he recommends, and the proportions of each, are as follows:—1 ton of turf or peat dust, (if ashes the better,) 1 cwt. soot, 1 cwt. common salt, 1 cwt. quicklime reduced to powder, 14 lbs. East-India salt-petre, (nitrate of potash.) The ashes, soot and lime to be well mixed together. The salt and

salt petre to be dissolved in urine, as it may be required to saturate and keep moist the heap. After the salts are expended, the urine to be continued—and new ashes to be spread on the top to intercept the vapors. Such a composition, he says, can be formed for 20s. a ton, which would be more efficacious than 40 bushels bone dust, costing 60s. or fifteen cords of yard dung, and might be transported at a single load. The ingredients in the mass supply all the elements for which decayed vegetable and animal substances are used, such as alkali and carbon—as recommended by Arthur Young, and also by Sir John Sinclair.

"The turf-dust, or ashes, contain carbonaceous matter, in a fit state to combine and retain the active properties of the other ingredients; and serve as a receptacle for the performance of the chemical action of the conflicting substances, until the whole mass becomes impregnated with elastic juices of various kinds, in a highly concentrated state, which are given out gradually, when applied to the soil, according to the influence of the atmosphere, and of sun and rain. The lime imparts the calcareous property essential to all soils in various combinations with acids. The salt and salt petre yield the mineral and vegetable alkalies, united to nitric and muriatic acid, both of which exert a most powerful influence when separated from their bases—which the contact of caustic lime slowly but certainly effects. The urine, of all sorts, furnishes animal matter and ammonia in abundance. The soot adds much strength to the carbonaceous matter, and increases the ammonia. I think this preparation may justly be termed Imperial Compost."

We give the preceding facts, not so much in the expectation that they are likely to result in great immediate benefit to American husbandry, but under the strong belief that they will ultimately prove highly beneficial, by directing the attention of scientific men to that all important branch of national economy—the improvement of the soil. Science and agriculture have hitherto been strangers, although capable of rendering the greatest mutual benefits. We wish to bring them together, and to associate their labors, for the benefit of our country, and the human family. If Dr. Olcott's "Patent Restorative," which is noticed in another column, possesses any thing like the properties ascribed to it, and of this we hope to be able to judge, and the cost is not too great, and in this matter we are not advised, it will prove a concentrated or portable manure, of immense value, and will justly entitle the discoverer to the gratitude of his countrymen and of the world.

The American Farmer,

The pioneer agricultural journal of our country, has been resuscitated, by its original editor, JOHN S. SKINNER, Esq. who has just issued the first number of a new series at Baltimore. Mr. Skinner rendered his country an invaluable service, in the thirteen volumes of the first series which he published; and he has both the talent and disposition to enhance the obligation by a further devotion of his time to the great work of rural improvement. May he receive, as he merits, a bountiful reward.

Common Schools in Virginia.

"I will infuse good habits and principles into children; for in twenty short years these children will be the men, giving the tone and manners of the nation."—M. Fellenburgh, of the Hoffey agricultural school.

Virginia seems disposed to bend the twig as the tree should be inclined. She has created a literary fund, not to instruct in Greek and Latin, but to supply English books to her primary schools, and she has chosen a competent board to select proper books, and to contract for and supply the schools with the same. The adage teaches, that a man is judged by the company he keeps. It will hold no less true, that a boy may be judged by the books he reads. Books are among a youth's earliest companions, and they have an influence in after life, for better or for worse, upon his habits and morals. The legislature of Virginia have therefore acted wisely, in providing the best companions for their youth, as the surest way of having them brought up in the way they should go.

Had our legislature been equally wise, and had they possessed the moral courage to do a good act in despite of party discipline, they would have done as Massachusetts and Virginia have done—they would have selected companions for our youth—the books of our common school libraries—which are to influence their modes of thinking and acting, and which will, in a great many cases, unquestionably, have a controlling influence over their future lives.

The president and directors of the Virginia Literary Fund, have advertised for proposals for the compilation or selection, or either, of a series of books for the use of primary schools—"books adapted to the institutions and habits of the people of that state, which will lay a solid foundation for a sound English education, and at the same time inculcate the purest principles of morality and religion, a true love of country and industrious habits, and direct the attention to the useful arts and common occupations of life."

Virginia, like a prudent parent, lays out the money for her children. New-York, like the weak or prodigal parent, gives the money to her children, to expend as they list, in bread, or in pea-nuts and powder-crackers.

Buckwheat Straw.

The editor of the Yankee Farmer ascribes great value to buckwheat straw, duly protected from the vicissitudes of the weather, as a food for cattle, and especially for milch cows; and adds, that if cut and boiled, it makes most excellent slop for them. We are apt in

our zeal to subserve the interests of our agricultural readers to overrate the advantages of every thing new. The nutrient properties of the stems of all grains and grasses, are believed to be somewhat in proportion to the number of their joints, in which these nutrient properties are principally secreted, and the care with which they have been preserved. Our buckwheat straw, after a frequent long exposure in the field, has been thrown into large piles, where it has been suffered to heat and spoil, as any other forage would heat and spoil under like treatment, and has consequently been considered worthless for cattle feed. More careful farmers have preserved it as they would their hay, and have found it, if not as nutritious, at least worth preserving as cattle forage. That buckwheat straw, properly cured, abounds in nutrient matter, is evidenced by the fact, that when ploughed in green, it affords an excellent pabulum for crops; yet buckwheat straw is not, under any management, as nutritious as corn stalks, and many of the grasses, for farm stock, if the latter are properly preserved. It has fewer joints, and less of nutrient matter, than the stems of most other grains or grasses, gathered, like it, while the stems are green and succulent. Corn stalks are probably twice as valuable, if cut up while they are full of saccharine juice, when the grain is well glazed, carefully and well housed, cut and judiciously fed to stock. But the practice too generally prevails in the east, of spoiling them, by long exposure to the weather, as we are wont to spoil our buckwheat straw. The forin, a short jointed grass, is found to be nearly as nutritious when gathered in November, as when gathered in August; but it is not to undergo a wasting fermentation in mass, like our buckwheat straw, nor severed from its roots, to be blanched in the field by the vicissitudes of weather, like the stalks of topped corn. And even that pest, the quack grass, first cousin to the forin, is probably one of the most nutritious grasses, roots as well as tops, that we have, if properly dried and preserved. Another article, which we consider of little value, and which really is worth very little in the common mode of managing it, might be rendered of as much service for cattle food as buckwheat straw—and that is the stems of our clover, from which we save the seed. And even the first crop of clover, which we cut for forage, is twice as valuable when cured in grass cocks, as it is when made in the old way of spreading to the sun, by which the foliage is wasted, and the stems blanched, before it is fit to be taken to the barn. Every vegetable production of the farm is, in a measure, rendered valuable or worthless, according to the care and judgment we bestow in preparing it for use.

Green Corn Stalks for Fodder.

Where soiling, that is, feeding with cut green food in summer, forms any part of farm economy, we doubt not that corn, sown broadcast for this purpose, may be made to form a very profitable crop, either as a main dependence, or as auxiliary to short or spare pasture. It gives the greatest burthen of green food, and of as nutrient a quality as clover, though it can hardly be made to yield a cutting before August. It might well come in after clover, as food for cows and pigs.

Mr. Holt, of East Haddam, Ct. has made some experiments in raising corn in this way for soiling; and he has found that sixteen square rods of ground, sown with gourd seed corn, the 12th June, gave food and subsistence for a horse fifty days, and thirty-three days for a cow. An acre would in this way, he thinks, feed thirty cows for a month. A small patch could not fail to be serviceable on any dairy farm, to supply the deficiency of pasture in August and September.

Herefordshire Cattle.

In our account of the most valuable breeds of cattle, in our first volume, we spoke of the Herefords as a branch of the original North Devon stock. By the judicious efforts of some of the English breeders, the Hereford stock is coming into high repute, for their fattening and working properties. As working cattle, they unite the activity of the North Devons, with the size and strength of the Long-Horns. In fattening properties, they have become competitors with the improved Short-Horns. At the autumnal Smithfield show, the Herefords carried five out of seven of the principal prizes, the Short-Horns one and the Devons one. The Hereford cattle have generally white faces, throats and bellies, are of a dark red, and sometimes brown or brindled.

The Herefordshire stock of one of the English breeders, J. D. Kidward, of Westhide, was lately sold at auction, at prices which sufficiently indicate the high estimation in which they were held. A cow sold for £80, (\$355); a heifer and calf for £81; a calf ten days old for £79; a yearling bull calf at £80, &c. and the cows averaged over £30, or \$133. These prices, we believe, are about as high as those for which the improved Short-Horns ordinarily sell; though individuals of the latter have often sold at prices much higher.

Use of Sulphur in preserving Plants from Insects.

The Domestic Encyclopedia directs, to tie up some sulphur in a piece of muslin or fine linen, and with this dust the leaves of young shoots of plants; or the sulphur may be thrown upon them by means of a common swan's-down puff, or even a dredging box. No insects or worms will prey upon vegetables which are thus protected. Sulphur has also been found to promote the health of plants on which it is sprinkled.

In support of the recommendation, we state two ca

ses wherein we have found the benefit of sulphur, one in protecting plants against insects, and the other in protecting them against mildew. Dusted upon grapes, in the grape house, they have prevented mildew upon the fruit. It is equally efficacious in the open ground, till the sulphur is washed or blown off. For many years, we have lost most of our early cabbages by a maggot which preyed upon the stem under ground.—By mixing sulphur with the grout in which the roots of the plants are dipped before planting, the evil has been wholly prevented; and if the plants are plunged deep in the grout, so as to coat the base of the leaf stems, they are protected from the grub. If scattered upon the rows of young cabbages and radishes, before or after they are up, it would probably be efficacious in protecting both the tops and bottoms.

Industry

Is the grand antagonist of crime, as well as of poverty. It is the salt which preserves from moral corruption. Were industry duly and universally inculcated in youth, and enlightened, encouraged and honored, we should have much less need of jails and poor-houses, and we opine, of lawyers, than we have now—three items of expense that consume much of our substance. The late Bishop Asbury, having, in one of his sermons offered a bitter reproof to those who neglect the duty to their children, of bringing them up in moral and industrious habits, suddenly paused and said, "but you will say this is hard. Alas?" he added, letting his voice fall to a low and soft key, "it is harder to be damned." And, temporally speaking, it is harder to see them in the jail or poor-house, or vagabonds at large.

The Multicaulis Fever

Does not seem to have passed its crisis. If aught were wanting to increase it, it is furnished by a late visit from Mr. Olmsted, of East-Hartford, Ct. who exhibited to us forty hanks of beautiful sewing silk, of various colors, weighing between four and five pounds, made from plants of the multicaulis, growing on one-sixteenth of an acre of land, and the plants themselves put in the ground after the 15th of May, the same season. So says Mr. Olmsted, and we have no reason to distrust his word. Mr. Olmsted's plan, and we believe his practice, is, to cultivate the multicaulis as an annual, that is, to plough up the roots every fall, preserve them in cellars or elsewhere during the winter, and to replant the roots and the cuttings, with the plough, in the spring. Mr. Olmsted also showed various silk fabrics, manufactured at Northampton and elsewhere, and silk in various modes of preparation.

Agriculture of Maine.

We are presented, in the Maine Farmer, with an annual and a semi-annual report of the trustees of the Kennebec County Agricultural Society, containing matters of interest to farmers in every section of the country.

The attention of a considerable portion of the inhabitants of Maine has been taken up with lumbering and fishing; and if agriculture has constituted the great employment, it has not received that attention there till lately which its importance every where demands.—Lumbering and fishing districts afford comparatively poor farmers, however bountiful nature may have been in her gifts to the soil. Within a few years, however, a new interest seems to have been awakened in this matter, and active and successful measures adopted, to advance agricultural improvement. Two agricultural papers have been established, and the state has made liberal appropriations to stimulate and reward her husbandmen; and societies have been formed, and conducted with intelligence and spirit; and improvement has progressed with a pace not perhaps surpassed in any of the other states. One of the leading agricultural societies is that of Kennebec, from which the two reports now under consideration have emanated, and from which we propose to glean some facts and suggestions of general interest.

The public benefits resulting from agricultural societies, are declared, and very correctly, to be palpable, great and certain.

"These trifling investments, (says one of these reports, in reference to the contributions to the funds of the society,) have yielded a profit not only to the individuals who have made them, nor the agricultural interest alone, but to the country at large, to the whole community. We assert with confidence, that the dollars which have been paid into the treasury of this society, have been refunded to those who have paid them, with interest; and, not like any other appropriations of money, profitable only to those who make them, they have yielded an equal profit to their neighbors; every individual within the sphere of the influence of the society has received, in some shape, a greater or less dividend of the increase."

The Grain Worm.—The report suggests no mode of preventing its ravages, except that of sowing spring wheat late. This coincides with our observations.—All wheat sown in April, or the early part of May, is liable to its attacks; while that sown after the 12th of May, and particularly after the 20th, is likely to escape its ravages. The fly which produces the worm, appeared in Maine last year, on the 27th June, and "closed the campaign about the 19th July—thus remaining about 22 days, during which early sown wheat is in blossom, but the late sown grain does not develop its heads, or but partially." The objection to late sowing is its liability to rust and mildew. To avoid these, the report recommends plenty of seed, and but light manur-

ing. We deem it far better to apply long manure to the previous crop, which may be corn or roots, than to give any manure directly to the wheat crop.

Wheat and barley are sown together, for bread-corn, in the proportion of two parts of wheat to one of barley, with decided advantage. The product is said to be greatly increased, the bread good, and the rust and mildew avoided. The culture of barley is also recommended as affording an excellent substitute, when hulled, for rice. The cultivation of this grain is increasing, as an article of food for man and brute.—The committee recommend late sowing, from the 20th May to the 1st June.

Ruta baga is said to be grown on moist as well as on dry soils—on clay loam as well as on sand.

Alternating crops is strongly enforced, in the injunction, to let no grounds that are tillable, remain more than two years in meadow; and that frequent ploughings be practised, whether the object be immediate profit or permanent advantage to the soil.

"Instances can be referred to," says the report, "where there is a difference in the tilled crop of more than one-half in favor of land which has been but two years in grass, in the same kind of soil, ploughed, manured and managed in the same manner with that which has lain in grass six or seven years."

The committee express an erroneous opinion, we think, when they ascribe to arable or ploughed crops, a fertilizing influence upon the soil. The two years' grass ley gives the elements of fertility; pulverization of the soil, by rendering it open to the influence of air, dew and heat, adds something to these elements, and tends to convert insoluble into soluble geine; but the crop, if carried off, is unquestionably exhausting; and if the process of cropping is continued, without the application of vegetable and animal manures, sterility must be the inevitable consequence. Grain crops are decidedly more exhausting than grass, or root, or green crops.

The reclaiming of bogs and marshy grounds, is strongly recommended; and the example of Massachusetts, where grounds before wholly unproductive, have been made to yield a hundred dollars worth of hay per annum, is given in illustration of the benefits of this kind of improvement. There are within five miles of Winthrop, says the report, bog land enough to produce, if properly reclaimed, five thousand tons of hay annually. This branch of improvement, in connexion with draining, even upon uplands, when required, is one of the first importance, not only to agriculture, but to the health of a country. But the subject of draining has not yet sufficiently engaged our attention, and we do not see it noticed in either of the reports.

In a late tour through N. Jersey, and upon the Delaware border of Pennsylvania, we saw an ample field for this kind of improvement. In many places the grounds are flat and wet; the soil of course cold, and the crops meagre. We have no sort of doubt, but that in most cases a thorough Scotch system of under-draining, in connexion with clover, plaster and a judicious alternation of crops, would in five years not only remunerate for the outlay, but would quadruple the agricultural products, and the intrinsic value of the lands. We were happy to learn, that some spirited intelligent farmers had commenced this system of improvement; and wherever it met our observation, the effects fully verified our calculations. We hope the inhabitants of those districts will profit by the example of these pioneers in improvement. In the southern part of our Union, irrigation may affect more than draining. But in the north, we have often a superabundance of water, not always upon the surface, but within the range of the roots of plants, which is hurtful to healthy vegetation. A soil saturated with water in a wet season, is wet and cold in the spring, and dry and hard in a dry summer. It is impervious to the genial influences of air and heat at all seasons.—When drained, the water does not stagnate, but percolates through the soil, leaving it light and porous; the air and moisture do not become stagnant and deleterious; the soil can be worked in all ordinary seasons of farm labor; the vegetable matter is readily decomposed; the roots of the crops have a healthy range in the search of food; and the crop, if there is food in the soil for its proper development, will be abundant.

The semi-annual report, to which we have hitherto confined our notice, closes with a proposition, to have the agricultural and mechanic interests better represented than heretofore, in their legislative councils; or, at least, for the appointment of an agent to represent the interest of the producing classes, to assist in devising the best modes of advancing the great objects of our labor—to render the state independent and prosperous. * * * "The agriculturists and mechanics need the services of such a man, the members of the legislature need his services, and the committee on agriculture need the services of just such a man."

Agriculture and manufactures the basis of our prosperity. Says the annual report—

"No nation, or state, or community, ever did, or ever can flourish long, when the productive branches of industry are not fostered and encouraged by the government. They are to the community what life is to the system: they give motion and activity to every limb, and if success in one is paralyzed, the other must languish with it. Let agriculture cease to yield her annual harvest, and the mechanic must leave his workshop to seek for the means of subsistence in the forest, or in the lakes and rivers. Let the manufacturer cease to supply his various machines and fabrics, and agriculture can no longer be successfully carried on. The agriculturist may indeed for a time, retain his flocks and herds, and in a half civilized state, live upon their milk and flesh, [and why not add the grains, the roots, and the fruits of the soil?] and

clothe himself in their skins, [and in the cloths of his family fabrication, from the wool and flax of his farm.] Agriculture and manufactures are children of one family, and equally deserving the attention of the parent, [the public?] equally requiring the fostering care of those whose aim it should be to devise measures for the common good."

What is national independence?—The committee answer—

"We are not independent, till our exports, in the whole, are equal to our imports. We shall not increase in wealth till the balance of trade is in our favor."

True, whether the rule be applied to an individual, a family, a state or a nation. The income must be greater than the outgoes, before the individual, the family, the state, or the nation can say—"We are independent." The last few years have increased the debt of the states one hundred and seventy millions of dollars, and upon this debt we are obliged to remit to Europe, annually, ten millions as interest, and the principal is besides to be paid. However we may laud our prosperity, and revel in our day, we are bringing upon our posterity a load of debt that will make them subservient to foreign powers, or to foreign influence, or that will merge them in anarchy and despotism.

The report very properly recommends increased attention to instructing the farmer and mechanic—who constitute the bulk of our population, in a higher grade of studies, and of bringing up our sons in habits of industry and regular application to business.

"It is this larger part, this majority, that is to give character to the whole. In devising plans, and adopting measures for the future good of a country, it is to the majority we are to look, not to small portions. If our condition as a community is ever to be greatly improved, the habits of the rising generation are to be looked to for the assurance of that improvement. If those who follow us are to be intelligent, prosperous and happy, and fill their places with honor to themselves and the community, we must look to their early habits for a guarantee. They must be furnished with employment, trained to business. They must be inured to that kind of exercise which nerves the arm, and gives vigor to the mind. To this object we call the attention of all who have her interests at heart, and all who have any thing to do in the direction of affairs."

The committee reiterate their former injunction, "never to mow more than two crops of hay from a field before ploughing it." They superadd to this, a recommendation unsound in theory, and which will prove fallacious in practice, "to turn out to pasture all our upland that we are not able to keep under the plough, and depend entirely on straw, fresh meadow hay, grain and roots for keeping stock in winter;" or, in other words, to make pasture grounds, which are the only portion of a farm which is improving without the aid of manures, permanent, and thus deprive the farm of all the benefits of the enriching effects of pasture—to confine the alternation of crops to a part, where it is acknowledged to be of great service, instead of extending it to the whole farm. If rotation is beneficial on low grounds, it will be found no less, and we think more so, upon uplands.

Root culture is strongly recommended; and the use of roots, in fattening stock, is deemed far more profitable than fattening upon hay and grain. The committee estimate a profit of \$20 the acre under root and other tillage crops, over that of an acre in meadow.

Hint in Transplanting.

The common error in transplanting trees, is not making the holes, or pits, for their reception sufficiently broad and deep. The roots require a mellow soil to strike down and horizontally in; and if the earth under and around them is left undisturbed and hard, they can not extend themselves for food, or but very slowly; the plant consequently grows but slowly, if it survives.—The following experiment, made by M. Chalmers, illustrates the importance of this hint. The hole should not be proportioned to the extent of the roots as they are, but to their extent as they may be and should be.

"Four peach trees, resembling each other as to size and vigor of growth, as much as possible, were planted. No. 1 in a hole three feet square; No. 2 in a hole two feet square, and Nos. 3 and 4 in holes eighteen inches square. The soil and exposition similar. No. 1 has every year given the most abundant crops, and the relative sizes of the trees are now as follows: the stem of No. 1, 13 feet high and 8 inches in circumference; that of No. 2, 9 feet high and 5½ inches in circumference; No. 3, 6 feet high and 3 inches 8 lines in circumference; and No. 4, 5½ feet high and 3 inches in circumference."

Showing a difference between No. 1 and No. 4—between large holes and small holes—of five inches in circumference, and 12½ feet in height. Apple, pear and forest trees, generally having a larger spread of roots than the peach, require proportionally larger holes.

Diseases of Neat Cattle.

There have a great number of cattle died in the country, within a few years, of a disease not definitely understood or described, but by many believed to be the murrain; and many have also been lost by hoven, for want of a knowledge of a proper remedy of relief. The following extracts, from the Encyclopedia of Agriculture, descriptive of the murrain, and of kindred diseases,—of the symptoms and treatment of these diseases, and modes of prevention;—and also of the hove and the modes of relief—cannot fail of proving interesting to cattle breeders and graziers. We will repeat here an opinion, founded upon reason and long experience, that the best preventive of disease in our farm stock, is the free use of salt, as a condiment; to which our cattle have had daily and free access for

fifteen years, during which time no indisposition has appeared among them.

Mild fever, pantos or parataria. Cattle appear sometimes affected with heat, redness of the nostrils and eyelids; they refuse food, are dull, evacuate stale with difficulty, and the urine is high coloured. These symptoms are often aggravated every other day, giving it the appearance of an intermitting affection. The complaint is often brought on by over driving in very hot weather, occasionally by pushing their fattening process too fast. If there be no appearance of malignancy, and the heaving be considerable, bleed, and give half an ounce of nitre, night and morning; but unless the weather be cold, do not house the animal.

Inflammatory fever, is called, among farriers, cow-leechers, and graziers, by the various names of black-quarter, joint felon, quarter-evil, quarter ill, showing of blood, joint-murrain, striking-in of the blood, &c. Various causes may bring this on. It is sometimes epidemic, and at others it seems occasioned by a sudden change from low to very full keep. Over driving has brought it on. No age is exempt from it, but the young oftener have it than the mature. The inflammatory stage continues but a few days, and shows itself by a dull heavy countenance, red eye and eyelids: the nostrils are also red, and a slight mucus flows from them. The pulse is peculiarly quick; the animal is sometimes stupid, at others watchful; particularly at first, and sometimes irritable. The appetite is usually entirely lost at the end of the second day, and the dung and urine either stop altogether, or the one is hard and the other red. About the third day a critical deposit takes place, which terminates the inflammatory action: and it is to the various parts to which this occurs, that the disease receives its various names. The deposit is, however, sometimes universal, in the form of a bloody suffusion throughout the whole skin. In others, swellings form on the joints, or on the back or belly; and in fact, no part is exempt from their attack. Sometimes the animal swells generally or partially, and the air being diffused under the skin, crackles to the feel. After any of these appearances have come on, the disease assumes a very malignant type, and is highly contagious.

Treatment of inflammatory fever. Before the critical abscesses form, or at the very outset of the disease, bleed liberally, and purge also. Give likewise a fever drink. (1.) If, however, the disease be not attended to in this early stage, carefully abstain from bleeding, or even purging; but instead, throw up clysters of warm water and salt to empty the bowels; give salt mashies. Green meat should be allowed, and a very cool shelter should be provided. As medicine, three doses are necessary, every day, of the malignant epidemic fever drink; (2) and if the weather be warm enough to allow it, two or three hours turning out in the field in a day is proper. It may be added that four drachms of muriatic acid in three pints of oak bark decoction, given twice a day, has proved useful. The swellings themselves may be washed with warm vinegar, both before and after they burst.

Catarrh or influenza in cattle, also known by the name of *felon*, is only a more mild form of the next disease. Even in this mild form it is sometimes epidemic, or prevalent among numbers, or endemic by being local. Very stormy wet weather, changing frequently, and greatly also in its temperature, are common causes. We have seen it brought on by change of food from good to bad, and from too close pasturage. It first appears by a defluxion from the nose; the nostrils and eyelids are red; the animal heaves, is tucked up in the flanks, and on the third day he loses the cud. There is a distressing and painful cough, and not unfrequently a sore throat also, in which case the beast almost invariably holds down his head.

The treatment may in some cases be cut very short, by giving, as soon as the attack takes place, *sweet spirits of nitre*, or when not at hand, *spirit of hartshorn*, an ounce, in a pint of sound ale [or other liquid.] After the running has come on, or as soon as the weakness has become considerable, give night and morning the fever drink (1) in a mash or drink. Most mashies, when the weakness is great, are proper. Bleeding only the first two days, carefully sheltering, but in an open airy place, and littering well up.

The malignant epidemic influenza is popularly called the *murrain* or *pest*; and has at various times made terrible havoc among cattle. Ancient history affords ample proof of its long existence; and by accounts handed down, it does not seem to have varied in its type materially. In 1757, it visited Britain, producing extreme fatality among our kine. From 1710 to 1714 it continued to rage on the continent with unabated fury. The years 1730 and 1731, and from 1744 to 1746, witnessed its attack, and produced many written descriptions of it. The British visitation of the malady in 1757, elicited an excellent work from the pen of Dr. Laidard, which was afterwards translated into several languages.

Dissections of those that have died of this disease, according to Sauvages, have shown marks of a great inflammation, and of a great putrid tendency; but the solid parts seldom run into gangrene. The fluid secretions, however, always were sufficiently dissolved and broken down by putridity. The paunch, he says, was usually filled with undigested matter, and the other stomachs highly inflamed. The gall bladder was also commonly distended with acrid, thick, brown bile. Goelich, who likewise dissected these subjects, describes the gall as particularly profuse and intolerably fetid. According to him, the whole alimentary canal, from the mouth to

the anus, was excoriated. Gawnola describes the murrain as accompanied with pustulous sores; and so great was the putrid tendency, that even the milk, before it dried up, which it generally did the fourth day, became putrid.

Symptoms of the murrain. Dr. Laidard described it as commencing by a difficulty of swallowing, and itching of the ears, shaking of the head, with excessive weakness and staggering gait; which occasioned a continued desire to lie down. A sanious foetid discharge invariably appeared from the nostrils, and eyes also. The cough was frequent and urgent. Fever exambating, particularly at night, when it usually produced quickened pulse. There was a constant scouring of green foetid dung, after the first two days, which tainted everything around: even the breath, perspiration and urine were highly fetid. Little tumors, or biles, were commonly felt under the skin; and, if about the seventh or ninth day these eruptions became larger, boils and buboes appeared with a lessened discharge of faeces, they proved critical, and the animal often recovered; but if, on the contrary, the scouring continued, and the breath became cold, and the mouth dark in colour, he informs us, mortality followed. Sauvage describes the murrain as showing itself by trembling, cold shivers, nose excoriated with an acrid discharge from it, purging often the first two days, but previous to which there was often costiveness. Great tenderness about the spine and withers was also a characteristic, with emphysema, or a blowing up of the skin by the air discharged underneath it.

Treatment of the murrain. In the early stages, all eminent authors recommend bleeding; but which should not only be confined to the very early periods, as to the first two days, but also to such subjects as by their previous health and condition can bear it. The animals should be placed in an open airy place; the litter should be frequently removed; and the place itself should be fumigated with the preventive fumigation (3.) It has been recommended to burn green boughs as a substitute; even charcoal fires, occasionally carried round the place, would be useful. Dr. Laidard advised the body to be washed with aromatic herbs in water; but vinegar would have been better. In early stages, saline purgatives, as from ten to twenty ounces of Epsom salts, are to be invariably used. If the scourings have already come on, still, however, purge, but with only half the quantity; an artificial purge will carry off the morbid bile; and if excessive weakness do not come on, the same may be advantageously repeated. Setons are also recommended in the dewlap. When abscesses appear, they may be opened, and their contents discharged, washing the wound with brandy or vinegar, if putrid sloughing takes place. The emphysematous swellings, or cracklings, may also be opened, and the air discharged. The other essentials of medical treatment, as detailed for the preceding disease, is here applicable in every particular. When recovery takes place, it is usually a very slow process, and requires care to prevent other diseases supervening. The animals should continue to be housed, and neither exposed to sun or wind for some time, and the feeding should be nutritious.

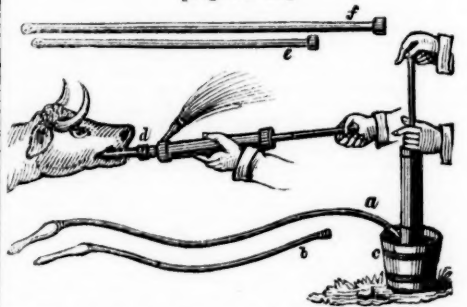
The prevention of the murrain, or the prevention of its spreading, in many respects is even more important than its medical treatment. When it has already appeared, all the out buildings, but particularly the ox lodges or stalls, should be daily fumigated with the preventive fumigation (3); and even the whole of the infected districts should have frequent fires of green wood made in the open air, and every such district should be put under a rigorous quarantine. The cattle on every farm should be examined three or four times every day, and the moment one is found to droop, he should be removed to a distance from any of the others. In very bad weather, while the disease is prevalent, the healthy cattle should be housed, and well fed; and their pasture should also be changed. The bodies of those which die of the disease should be buried with their skins on, very deep in the earth, and quick-lime should be strewn over them.

The hove or blown in cattle is also an inflammatory affection of the paunch, ending in paralysis and rupture of its substance. From the frequency of its occurrence, it has become a subject of investigation with almost every rational grazier, and a particular matter of inquiry with every agricultural body; from whence it is now very successfully treated by the usual attendants on cattle, when skilful; but when otherwise, it usually proves fatal. It is observed to be more frequent in warm weather, and when the grass is wet. When either oxen, cows or sheep, meet with any food they are particularly fond of, or of which they have been long deprived, as potatoes, turnips, or the different grasses, particularly red clover, they eat greedily, and forget to lie down to ruminate, by which means the first stomach, or paunch, becomes so extended as to be incapable of expelling its contents. From this inflammation follows, and fermentation begins to take place: a large quantity of air is let loose, which still adds to the distention, till the stomach either bursts, or, by its pressure on the diaphragm, the animal is suffocated. The situation of the beast is known by the uneasiness and general swelling of the abdomen; while the circumstances of the animal being found with such food, or the presumption that it has met with it.

Treatment. There are three modes of relieving the complaint, which may be adverted to according to the degree of distention, and length of time it has existed. These are, internal medicines; the introduction of a *probang*, or

and the puncturing it by the sides. Dr. Whyatt, of Edinburgh, is said to have cured eighteen out of twenty hove cows, by giving a pint of gin to each. Oil, by condensing the air, has been successfully tried. Any other substances, also, that has a strong power of absorbing air, may be advantageously given. Common salt and water, made strongly saline, is a usual country remedy. New milk, with a proportion of tar equal to one-sixth of the milk, is highly spoken of. A strong solution of prepared ammonia in water often brings off a great quantity of air, and relieves the animal. [Commonly, procured either by pouring water upon ashes, or dissolving pot or pearl ashes, has proved highly efficacious.] Any of these internal remedies may be made use of when the hove has recently taken place, and is not in a violent degree. But when otherwise, the introduction of an instrument is proper, and is now very generally resorted to. The one principally in use is a species of probang, invented by Dr. Monro, of Edinburgh. Another, consisting of a cane six feet in length, and of considerable diameter, having a bulbous knob of wood, has been invented by Eager, which is a more simple machine, but hardly so efficacious. It is probable that in case of emergency, even the large end of a common cart whip, dexterously used, might answer the end. But by far the best instrument for relieving hove cattle, as well as for clistering them, is Read's enema apparatus, which is alike applicable to horses, cattle and dogs. It consists of a syringe (a, Fig. 19,) to which tubes of different kinds are applied, according to the purpose, and the kind of animal to be operated upon.

[Fig. No. 19.]



There is a long flexible tube for giving an enema to horses and cattle (a) and a smaller one for dogs (b). To relieve hove bullocks effectually, it is necessary not only to free the stomach from an accumulation of gas, but from the fermentating putrescent mixture which generates it. For this purpose a tube (f) is applied to the extremity of the syringe, and then passed into the animal's stomach through the mouth, (d) and being put in action, the offending matter is discharged by a side opening. When the same operation is performed on sheep, a smaller tube (c) is made use of. The characteristic excellency of Read's instrument is, that there is no limit to the quantity of fluid that may be injected or extracted. The same instrument is used for extracting poison from the stomach of man, for smoking insects, extinguishing fires and syringing fruit trees. [This machine is now sold at the seed shops, as a garden syringe—lacking merely the tubes which may be prepared readily to screw on.] The introduction of any of these instruments may be effected by the aid of an assistant, who should hold the horn of the animal by one hand, and the dividing cartilages of the nose in the other; while the operator himself, taking the tongue in his left hand, employs his right in skilfully and carefully introducing the instrument; the assistant bringing the neck and head into such an attitude as to make the passage nearly straight, which will greatly facilitate the operation. But when no instruments can be procured, or as cases may indeed occur when it is advisable not to try them, as when the disease has existed a considerable time, or the animal has become outrageous, or the stomach so much distended with air, that there is danger of immediate suffocation or bursting—in these instances the puncture of the maw must be instantly performed, which is called *paunching*. This may be done with the greatest ease, midway between the ilium, or haunch bone, and the last rib of the left side, to which the paunch inclines. A sharp pen-knife is frequently used; and persons in veterinary practice should always keep a long trochar, which will be found much the most efficacious, and by far the most safe, as it permits the air to escape certainly and quickly, at the same time that it prevents its entrance into the cavity of the abdomen, which would occasion an equal distention. As soon as the air is perfectly evacuated, and the paunch resumes its office, the trochar may be removed; and, in whatever way it is done, the wound should be carefully closed with sticking plaster or other adhesive matter. It is necessary to observe that this operation is so safe, that whenever a medical assistant cannot be obtained, no person should hesitate a moment about doing it himself. After relief has been afforded either by the probang or the paunching, a stimulant drink may yet be very properly given, such as half a pint of common gin, or one ounce of spirits of hartshorn diluted in ale or water, or 2 oz. of spirits of turpentine in ale, may any of them be used as an assistant stimulus. When also the cud is again chewed, still some relaxation of the digestive organs may remain; at first, therefore, feed sparingly, and give, for a few mornings, a tonic (4).

(1.) *Fever drink*—Sweet spirits of nitre 1 ounce, milderer spirit 6 ounces, water 4 ounces.

(2.) *Malignant epidemic fever drink*—simple oxymel [a mixture of vinegar and honey] milderer spirit, beer yeast of each 4oz. sweet spirits of nitre 1oz.

(3.) *Fumigations for purifying infected stables, sheds, &c.*—Manganese 2 ounces, common salt 2 ounces, oil of vitriol 3 ounces, water 1 ounce. Put the mixed manganese and salt into a basin; then, having before mixed the vitriol and water very gradually, pour them, by means of tongues, or any thing that would enable you to stand at a sufficient distance, on the articles in the basin gradually. As soon as the fumes rise, retire and shut up the door close.

(4.) *Tonic Alteratives*—Gentian, aloes, ginger, blue vitriol, in powder, of each one drachm, oak bark in powder 6 drachms.

Spirit of Foreign Agricultural Journals.

The principles of an enlightened agriculture have almost a universal application. The practices of agriculture vary with climate, with soil, and the demands of the market. The European agricultural publications contain much of the principles that is useful in our practice, and much in practice, from which we may profit. They also contain much which is very useful on the other side of the Atlantic, but which it would be a waste of ink and paper, to promulgate here. We design to separate the wheat from the chaff, that is, to give an abstract, or to publish in detail, such matters, as have a direct application to our husbandry, whether in principle or in practice, and to omit what is inapplicable to our climate, our products and our markets. These notices will of course be excursive, as we find them in perusing the foreign works to which we have access.

If any apology or explanation is deemed necessary, for filling so many of our columns with *foreign* instead of *domestic* extracts—we have two reasons to offer, viz. 1. That the principles or science of agriculture are better understood and applied in Europe than they are in America, and the practices, perhaps from necessity, more economically and profitably managed there, than they are with us. And 2. Because these extracts add much to the stock of our agricultural knowledge, by superadding to American skill and knowledge, which is being widely disseminated, the agricultural skill and knowledge of another continent, from whose science and practice we have profited greatly, and may profit much more, in all the arts of productive labor, and particularly in the various departments of husbandry. In selecting models for imitation and improvement, it is always wise to select good ones; for if we fail in copying the entire picture, we may catch at least the great outlines, and fill up the canvass as our leisure or our interests will permit or require.

HONEY-DEW AND MILDEW PREVENTED BY SALT.

George W. Johnson has given an essay, in the Quarterly Journal of Agriculture, on the diseases incidental to the most usually cultivated plants, in which he ascribes the honey-dew to a morbid state of the sap of the plants on which it is found; and he states several experiments in which it was prevented, by the application of a weak solution of common salt. There is danger in making the pickle too strong, so as to injure the plant. Put one ounce of salt, says Mr. Johnson, to a gallon of water. "I have noticed," says he, "that standard fruit trees, around which, at the distance of six or eight inches from the stem, I had deposited, at the depth of twelve inches, a quantity of salt, to promote the general health of the tree, according to the manner adopted to some extent in the cider countries, for the apple orchards; that these escaped the honey-dew, (which infested adjacent trees,) just as well as those which had been watered with salt and water."

The experiments of Hitt and Knight, which Mr. Johnson quotes, go to show, that salt is also a preventive of mildew, a conclusion which we had almost arrived at, from our limited experiments upon the gooseberry and grape. By the use of water in which a small portion of common salt had been dissolved, Knight preserved the health of his autumnal crop of peas from mildew, a disease to which they are very subject. "It is more than probable," says this distinguished horticulturist, "that most of the diseases of plants arise, in some way or other, from the irregular action of the sap, caused very often by sudden transitions in the atmosphere.—By a very easy experiment, the cultivator may convince himself of the power of common salt in preventing these injuries."

The use of salt in promoting health, or preventing disease in animals, is now well known; as is the fact, that it is most favorable to farm stock when given daily. How far the analogy will hold good between animals and vegetables, remains to be ascertained. It seems from the experiments above noted, that it does operate beneficially in preventing certain diseases in some plants. This should encourage us to experiment with it upon others.

In speaking of the *extravasation of sap* from trees and vines, which often takes place to a prejudicial extent, from wounds in trees caused by winter or spring pruning, before the leaves have expanded, Mr. Johnson directs, as the best means of preventing or checking the flow, that the wound be covered with a sponge, dipped in a solution of sulphate of iron, and the sponge covered with a piece of sheet lead, and bound there firmly.

AGRICULTURAL SCHOOLS.

Are springing up in Ireland, and measures are taking

* Chloride of soda, or of lime, expressed in a liquid form, in open vessels, would probably be alike efficacious.

to establish them in England; while in France, says the Westford Independent, "new schools are founded daily, establishments for rearing cattle of improved breeds, and making experiments in husbandry, are formed and conducted at the cost of government, and a considerable number of our best animals and sheep, are constantly purchased to improve the native stock. Professors are appointed in various parts of the country, to give lectures on agriculture, and in short, all possible means taken to render the nation independent of foreign countries, for the supply of such necessities of life as are capable of being produced by their own soil. We consider these schools the grand basis of agricultural improvement—the light that will shed its benign influence on the mist that now envelops the principles upon which the most important practical operations in agriculture are based."

The most prominent plan proposed in England, is to establish a national agricultural college, upon a broad and liberal basis, to be supplied with the best teachers, and to connect with it pattern or experimental farms, upon different soils, and in different sections of the kingdom, to be under the direction of the best practical men. In the college the scientific theory of the art is to be taught, and the explanations of the different systems of practice in the kingdom and abroad to be given.—The practical instructions to be given on the farms, to which the students are to be sent for stated periods.

"These farms to be used solely for experiments, to test and prove every suggestion that science, theory and practice may offer: and if upon repeated trials, they be found irreducible to practice, they will fall to the ground; if they succeed, they would be sent forth as attested and valuable facts. The members of the central college and the conductors of the farms would be in constant communication, comparing and examining every suggestion and observation, both by science and practice, and detailing to each other, for the general benefit, the results of reflection and experience." "If ever such an institution be established," says a writer in the Farmers' Magazine, "the first step must be, to kick sheer overboard, the prejudices of men, and to level with the dust that curse of the human race, the great barrier to improvement in all ages of the world. On every subject, the greater part of mankind are biased in favor of some particular way of thinking, and way of performing any operation which they have adopted, and to which they have been accustomed, and of which very few are ever able to divest themselves. Prejudice completely obscures our perceptive and intuitive powers, clogs our understanding, and perverts our judgment, and renders wholly useless the reasoning faculty conferred upon us as the distinguishing characteristic of our nature. No sound judgment can be exercised on any subject, or a satisfactory conclusion arrived at, where this pernicious propensity prevails: no dependence can be placed on the opinion of any man, who allows his judgment to take precedence of his reason, and whose mind is wilfully shut against conviction.—For the furtherance of any art, the great essential desideratum is to combine theory and practice; and on this point the agricultural world (with some splendid exceptions,) has floundered over head and ears in the mud. It is only of late years, that our mechanics and manufacturers have been able to combine them; but until that be effected, and as much as possible in the same persons, or by different persons being in constant and friendly intercourse, it is very evident the progress will be slow. If properly established and conducted, incalculable benefits might accrue. The members of the college must consist of men eminent for knowledge in every branch of education connected with agriculture, and one thoroughly versed in agriculture itself, and their employment would be to draw suggestions from the investigations of science, to be transmitted to the farms for the test of experience. The conductors of these farms must be the most intelligent practitioners that can be found for the soils they are intended to manage; thoroughly acquainted with arable farming and the suitable implements; our different breeds of stock; intelligent and open to, and able to comprehend, and able to execute, the suggestions transmitted to them from the central college. Until we have a field of tests, we do not know what invaluable discoveries may be hid in suggestions laughed at and neglected, or in those that may be made. That great absurdity has attended many of them, must be readily granted; but the wheat cannot be obtained without separating it from the chaff."

Thus far our extract. There is no truth more palpable, than that science, to benefit agriculture as it has benefited the other arts, must be associated and combined with its practical labors, as it has been profitably combined with the labors of the artisan and manufacturer. And we are of opinion that this would be more efficiently done, in a school and farm in the same location, than it could be where the school is located in one place and the farm in another. Locations may be found which combine most of the varieties of soil; and the principles of science being well inculcated, and their general application to practice properly taught and explained, the pupil would be qualified judiciously to vary his practice according to soil and circumstances. Like civil engineering, which was hardly taught or practised before the commencement of our system of internal improvements, a school of scientific and practical agriculture would soon produce competent teachers, to take charge of new institutions, or to disseminate in the community, the various branches of useful knowledge acquired in the school.

STRATHMORE AGRICULTURE.

A premium of ten sovereigns was awarded last fall, by the Highland Agricultural Society, to Robert P. Newton, of Hallyburton, for an essay on the rural management of the Forfarshire part of the western district of Strathmore. We abstract some facts of general application, as interesting and profitable to our readers.

The potato, Hopetoun and common oat, are cultivated extensively, not only as cattle food, but as a principal bread corn for the inhabitants. The common oat

pays best on poor soils; the Hopetoun ripens earliest, an object there, but is most liable to smut; it gives the best straw, and the potato oat, on good land, the best yield in grain.

Root crops, that is, the potato and ruta baga, are extensively cultivated, fed to cattle, and, being thus converted into beef and mutton, are conveyed, at trifling expense, to market, and turned into money, while the manure they produce, goes to enrich the land.

Bone dust is in high estimation, and a handsome public acknowledgment has been made to Mr. Keillor, who first introduced it, and demonstrated its advantages. Bone dust and *sheeping* together, that is, pasturing of sheep, form the most ample and rich preparation for the barley crop, which is a favorite one in the district. It would be equally advantageous for any other arable crop, which should follow turnips.

REARING CALVES.

We have endeavored to convince our breeders, and even our dairymen, that they mistake their interest, in not rearing more calves. Cattle have become scarce, from the demands of the butcher and the dairyman, and command double the price which they formerly did. It has been the practice of the dairymen to *deacon* their calves, that is, to kill them at three days old, to save milk; and of the breeder of prime stock, to give two cows to one calf, in order to grow large calves—a bad criterion, however, of good ones—to let the calves run with the cows, and thus sensibly to diminish the value of the cows as good milkers. In Strathmore, a far better mode is practised. One cow brings up five calves, and instead of the latter subsisting altogether upon milk, they are early taught to subsist, in part, upon that food which is ultimately to constitute their entire subsistence. This course is dictated as well by economy as by nature. This mode of managing calves is from Mr. Watson, and we give it in his words.

"The cows intended for nursing, generally calve early in the season, about the month of January or February, when a strange calf is procured from some of the small tenants in the district, who have dairies. This calf is suckled with the others by the same cow, and although the cow at first shows great dislike to the stranger, in a few days she receives it very quietly, care being taken that both are put to suck (one on each side,) exactly at the same time, by tying the calves bands to the stall, or to the band of the cow, so as to keep each calf at its own side. They remain with the cow for fifteen or twenty minutes, by which time her milk is perfectly drawn away. As the calves advance in age, they eat hay, sliced potato, porridge, and other food they are inclined to take.—By the first of May, or as soon as grass is ready, they are weaned and turned out from the byre, when two fresh calves are immediately put into their stalls, and receive the same treatment, excepting that they are turned out at twelve o'clock, after they have got their suck, to eat grass, and are brought into the byre again at evening, when the cows come in to be sucked. This set is ready to be weaned by the first of August, and a single calf is put into the feeding-pen, and fattened for the butcher, the season being now too late for rearing. As these are fed off, the cows are let off milk, having each suckled five calves. It is necessary to have a very steady and careful person to attend to the suckling, which has to be done three times a day, viz: early in the morning, before the cows are turned out to grass, at mid-day, and in the evening when the cows come into the byre for the night, and get a little cut grass, tares, or other green food. The byre is arranged so that each of the cows has a stall about four feet wide, with their heads to the wall; and on the opposite wall the calves are tied up, two in a stall, exactly behind the cow, so that there is little trouble in putting them to the cow, and no chance of displacing them. The fat calves have in some seasons been sold at £5 (= \$22.) each, this being the scarcest time of the year for veal."

On the advantages of sheep husbandry, in improving the soil, Mr. Newton is decided and earnest.

"It is now universally allowed," he remarks, "that there is no manure which diffuses itself more equally, or which is more valuable in its effects, than that produced by sheep, whether as applied on pasture land or in turnip feeding on the ground. Farmers in this district are now so satisfied of this, that they almost universally make a point of grazing their pasture lands one year with sheep. It is an old remark, that where you have plenty of sheep, plenty of oats follow.—Oats, it will be remembered, being the great agricultural staple of Scotland."

In speaking of the roads, Mr. N. very justly gives a preference to M'Adams over rail roads, as means of facilitating agricultural improvement and profit. "The superiority of the M'Adams system," he says, "is now almost universally acknowledged, and almost universally adopted." Rail-roads are private, or corporate property, subject to the caprice and changes of their proprietors; while the other roads are public, upon which every man can travel with his own team, subject to a moderate regulated toll.

Cattle sheds are general. The pillars which support the roof are of cast iron, and cost 10s. (\$2.22.) each, the walls are of stone, and the roof is slated. The cattle are put in them in cold, rainy or stormy weather, and well littered. These sheds are cleaned out at the middle and close of the season, and the manure is conveyed to some spot for a dung hill, convenient to the field to which it is to be applied; and women and boys are employed to go over the pasture with a barrow, to collect the droppings, which are added to the pile; the dung is turned and mixed, and in August and September, three parts of waste earth are mixed with two of the dung; and in this condition it is soon after applied as a top dressing to grass lands, in proportion to 20 cart loads, of 30 bushels each, to the acre.

The rents in this district average 32s. or about \$7 the acre. The "*peasantry*"—farmers—are represented to be a "sober, hard-working quiet race;" the "*hinds*"—

laborers or farm-servants, unless they are married, "are generally huddled together in what they call a *booth*. Each man has his allowance of meal and milk; and brose [oat-meal with milk or water,] constitutes his breakfast, dinner and supper!"

BENEFITS OF DRAINING.

In the "Mark Lane Express," it is stated, that land which, with difficulty, had been let at five shillings per acre, became worth two guineas (42s.) to the landlord, by the mere operation of draining. This, says the writer, I know to be the case on many large estates in Scotland. It is mentioned, that an increase of twelve bushels an acre may be counted upon as one result of draining; but I can appeal to the principal agriculturists of East-Lothian and Ayrshire, (the counties where draining is most advanced,) whether the increase of crop consequent upon that process may not more properly be put at double, and even treble, the previous produce of the land.

CULTURE OF THE POTATO.

Some interesting facts in regard to the culture of the potato, are given in a communication of Mr. Towers, a correspondent of the late Mr. Knight, in the Quarterly Journal of Agriculture. The communication embraces the opinions and experience both of Mr. Towers and Mr. Knight; and no persons are better qualified, perhaps, than these two gentlemen were, both from their knowledge of vegetable physiology and numerous and carefully conducted experiments, to make sound conclusions in the matter.

Potatoes will grow in any soil, containing vegetable matter; but, says Mr. Towers, the produce in amount or quality appears to be materially influenced by local agencies, even in soils of the same constitution; and he cites cases, where a kind is very good in one district, and very inferior when grown in another district.

That soil and routine of culture which produce the strongest haulm, will yield the greatest bulk of tubers; though if the foliage is too massive, the quality of the tubers will be inferior, and prove deficient in starch. He therefore prefers a medium growth of tops, wherein the balance of strength is supported between the stem and the leaves, the result of a well prepared and healthy soil, reciprocating with the stimulus of the sun's rays, and the decomposing agencies of atmospheric air and water. Firmness of texture and mealiness ought to be the standard, rather than weight of tuber; and such, he says, may be produced by proper management, on all soils. Although Mr. Knight has calculated that 1,000 bushels, weighing 80lbs. each, may be produced on an acre, partially demonstrated by experiment, Mr. Towers estimates the average crop of the county at 300 bushels.

Mr. Towers finds fault with the practice of cutting potatoes sometime before they are planted. The starch exudes from the cut surface, and the set becomes soft and flaccid in consequence of emptying the cellular tissue by evaporation. He cuts in the field as he plants.

He quotes a letter from Mr. Knight, saying, that he obtained 670 bushels of 80lbs. each, from an acre; that he always plants whole seed, and selects the largest for seed, and from very early crops; that he plants them upon their ends, to stand with the crown end upwards, at four or six inches apart in the rows, and the rows two to four feet apart, according to the natural growth of the tops, the taller growth requiring the widest intervals—if the height of the stems be three feet, the intervals between the rows should be four feet.

Both of these gentlemen concur in the opinion, that the blossoms take away a great deal of sap, or nutriment; and they therefore prefer those kinds for culture, which do not produce seeds, or balls, of which Mr. Knight obtained several new varieties by cross impregnation. The exhausting influence of blossoms and fruit may be seen upon fruit trees. If a tree fruits abundantly, it makes little or no growth in wood; if one blossoms which has been just before transplanted, it proves injurious or fatal to the tree.

To obtain early potatoes, Mr. Knight takes those which have ripened early, for the reason, that those which ripen late, are not sufficiently "excitable," though more eligible for a late, or rather moderately early crop, the produce of which will be proper to plant for a very early crop. Mr. Knight adds, that immature potatoes, or those which have not become perfectly ripe, are as good for planting as others. Mr. Towers' experiment with early potatoes, gave an increase of six for one.

Mr. Towers cuts his potatoes into sets comprising two, and not more than three eyes. He calls the end where the eyes are chiefly congregated, the *rose*, or *crown*; and he cuts diagonally, dividing the crown into different sets. Two facts are here stated, which, we confess we never before considered, but of the truth of which we are satisfied, and which we believe few farmers have duly appreciated. We state them in Mr. Towers' words.

"First—All the eyes of entire potatoes do not push at one time, therefore it is a mistake to suppose, that a plant becomes crowded by a useless haulm, if the potatoes be planted whole." [We see this at planting. Some eyes have sent forth their sprouts, while others remain perfectly dormant.]

"Again—Persons have imagined, that weakness of the root is occasioned by the destructive action of frost upon the earliest shoots. This is also a mistaken notion. For if any eyes remain unexcited in the tuber under ground, the loss of one shoot is speedily supplied by the substitution of another. Time may, indeed, be sacrificed to a certain extent, but that is all. Of this any one may convince himself, by endeavoring to exterminate a straggling potato; he may hoe, or pull off the first shoots, and think his ground cleared of the in-

truder; but in a week or two the spot will be again occupied, and it will be perceived, that nothing short of the complete removal of the tuber can prove effectual. If sets, with one or two eyes, have been planted, and have sent up all their shoots, then the destruction by frost may prove fatal; but it may happen that a shoot may appear to be killed to the ground, and yet produce a fruitful plant, though late in the season, from embryo eyes seated round the stem, near its point of eruption from the potato."

These gentlemen seem to have arrived at the conclusion, and it is certainly a rational one, that *light*, that is, the influence of solar light upon the plants and soil, has a controuling influence upon the quality and product; and hence they argue, that the foliage should not be crowded, but be duly exposed to the sun and air.

Mr. Towers prefers sets for seed to whole tubers.—He found that sets gave as great a product as whole tubers; generally about six of produce to one of seed, and that by this means he effected a great saving of seed. He also applied lime, ashes or gypsum to his cut potatoes before burying them in the ground, not only to increase their growth, and prevent the waste of their juices, but to prevent their being attacked by the grub. In several experiments he obtained 354lbs. from 12lbs. of seed, 520 from 30lbs. 215 from 22lbs. and 150lbs. from 30lbs. of seed.

The potato, according to Mr. Towers, prefers a free soil; but where the soil is heavy, he advises, that the land be set up in one bout ridges in autumn, to expose a great surface to the frost; that the manure be previously added, with coal ashes if they are to be had, which never fail to meliorate heavy binding earth. He says that the plant affects a light rich soil, wherein its fibrous roots and tuber bearing processes may wander laterally but not deeply; that the manure should be well blended with the earth; and that six inches of good mould is enough for the crop.

The keeping quality of a variety of potatoes is to be judged of by the protrusion of their eyes or shoots in spring, the eyes of the good keepers remaining longest dormant. To keep them in good eating condition, during winter, he advises that they be kept in a dry cave, or pit, or cellar, where the utmost degree of equable cold can be maintained, consistent with the exclusion of frost.

EXHIBITION OF SEEDS.

An exhibition of seed corn and grass seeds is noticed in a late *Gardeners' Gazette*, at which handsome premiums were awarded for the best parcels. The weight of some of the prize seeds were as follows:—Barley 57 and 58lbs. 3oz. the chevalier the heaviest; oats 45lbs.; rye grass 21lbs. the bushel. Whatever diversity of opinion may prevail, as to the policy of awarding premiums on flat cattle and large crops, none we believe is entertained as to the propriety of encouraging, by premium, the raising and selling of good seeds.

AGRICULTURAL STATISTICS.

In Great-Britain there are 961,154 families, embracing 4,505,670 individuals, which belong to the agricultural class, and a total population of 16,539,318—a proportion of a little more than one agriculturist in four of the population. In Ireland, the agricultural families amount to 884,339, embracing 4,863,864 individuals, in a total population of 7,767,441. The cultivated acres in Great-Britain exceed 34,000,000; in Ireland they do not amount to 15,000,000.

AGRICULTURAL MUSEUMS.

Two have recently been established in Ireland.

CORN LAWS.

When the average price of wheat in the British market is under 70s. (\$15.54,) per quarter of eight bushels, the importation of foreign grain is prohibited; when the average price is over 70s. the importation is permitted, on the payment of a duty of 17s. a quarter.—This was under the old corn law. The maximum price has since been reduced to 60s. per quarter.

COLLECTIONS.

Early Rising.—There is no time spent so stupidly as that which inconsiderate people pass in a morning between sleeping and waking. He who is up may be at work, or amusing himself; he who is asleep, is receiving the refreshment necessary to fit him for action; but the hours spent in dozing and slumbering are wasted without either pleasure or profit. The sooner you leave your bed, the seldomer you will be confined to it. When old people have been examined, in order to ascertain the cause of their longevity, they have uniformly agreed in one thing only, that they "all went to bed and rose early."—*Gardeners' Gaz.*

The German Press.—It is calculated that ten millions of volumes are annually printed in Germany, and that there are upwards of fifty thousand authors of one or more books.

Encomium of Socrates upon Agriculture.—"Agriculture," says Socrates, "is an employment the most worthy the application of man, the most ancient and the most suitable to his nature; it is the common nurse of all persons, in every age and condition of life; it is the source of health, strength, plenty and riches, and of a thousand sober delights and honest pleasures. It is the mistress and school of sobriety, temperance, justice, religion, and in short of all virtues, civil and military." Socrates would no longer be counted a sage in this enlightened age; for even many farmers have discovered, that his counsels are erroneous, and that agriculture is subordinate to the more genteel pursuits of life; and they therefore wisely resolve to make their sons managers of tape and molasses, or retailers of law, rather than tillers of the soil.

Measuring light.—Sir John Herschell has lately in-

vented an instrument for measuring the intensity of light, and he has found, that at the Cape of Good Hope this is twice as great as in England. "Although temperature has a great deal to do with plants," remarks Prof. Hall, "probably light has much more."

ARTIFICIAL MEADOWS.

The vast benefits resulting from artificial meadows, or in other words, of selecting for them plants of our own choosing, and alternating with grain and root crops, is strongly illustrated in the following extract from Yvart, a French agricultural writer.

"If meadows," says he, "be the nerve of good husbandry, it is, above all, to artificial meadows we must apply this great truth. The state of those cantons which have adopted the new system, is now as brilliant as it was before wretched and miserable. Alsace has put on a new face since the introduction of clover, and wheat crops have been increased more than one-third. The village of Sebach, under the old system, bought annually 180,000lbs. of forage, and now sells 150,000. The canton of Virieu, which gave formerly only rye and buckwheat, (and poor crops of these,) now gives abundant crops of fine wheat. This is altogether owing to clover and gypsum. The same remark applies to the department of Doubs. In the departments of the Seine and Oise, the four year rotation is adopted, of which clover is the basis, and more than double the produce is raised for exportation. In Varenne, the soil of which is a poor sand, the same effect is produced, by sainfoin, instead of clover. In a canton of the department of Loiret, M. Segret has doubled his income by the introduction and culture of Lucerne."

THE BUDGET.

Cutting Bushes.—Oliver Moore asks, at what season bushes, sprouts and timber should be cut, that they may not grow again—and if the moon has any influence in the matter? If we are to regard popular opinion, the old moon in August is the propitious time to cut bushes, &c. to prevent their sprouting again; and so far as we have had experience, it goes to confirm popular opinion. In August, there is probably less sap circulating in trees than at any other time in summer, and consequently there is less disposition to throw up new sprouts; while the intense heat of the season, operating upon the wounds, tends to destroy vitality. All we will pretend to say in regard to lunar influence is, that there is ordinarily a more abundant flow of sap in the new than in the old moon. We therefore advise that bushes be cut in the old moon in August. Mr. Moore is informed, that the entire volumes of the *Cultivator* may be had, either stitched or bound.

Short-Horn Bull.—George P. Hawley, of Frankfort, Herkimer, asks us where he can buy a full blooded Short-Horn bull, spring calves, &c. and John Sommer, 3d, of Passumpsic, Vt. informs us he has such a bull to sell. C. N. Bement has also one or two. We have opened an advertising page particularly for the buyers and sellers of farm-stock, implements, seeds, &c.

Foreign Agricultural Periodicals.—A correspondent, J. M. M. asks us to recommend to him a foreign agricultural journal. We recommend the *Quarterly Journal of Agriculture*, published quarterly at Edinburgh, and the *Farmers' Magazine*, published monthly in London, both or either, as the best we are acquainted with.—Our correspondent will require all obligations to us, by sending the result of his pending "experiments," favorable and unfavorable, in the Miami valley.

Silk Culture in the District of Columbia.—Our Washington correspondent writes—"Besides a number of individuals who have commenced growing mulberry in this district, the Washington City Silk Company have purchased a farm near the city, at \$12,000, have planted 200,000 buds, and are feeding the worms from five ounces of eggs. The company have also purchased three of Gay's Machines, and intend to manufacture all the cocoons they can either make or purchase in the district." And we hope they will employ in their labors, the invalid, the indigent and the young. Thus they may feed the hungry and clothe the naked, without serious prejudice to their interests.

Thrashing Machines.—It is out of our power to add to the information we have published on this subject. In answer to the inquiry of J. D. Rodney.

THE "ROBINSON FUND."

"For the encouragement of those who feel disposed to contend for these premiums, I have to inform you, that the seat of justice of Lake county has lately been located in the town where those premium lots are situated, and which will greatly enhance their value. May they be as nobly won, as they will be freely given. I remain, respectfully,

SOLON ROBINSON."

CORRESPONDENCE.

Legislative Encouragement to Agriculture.

The following is an extract of a private letter to the conductor. The writer is a farmer. His letter will show that he is a gentleman of talents, and a patriot. We do not feel at liberty to give his name. It matters little whose hand records truths, if they concern, as the subject of this letter does, the most important interests of the state. We commend the subject matter to the serious attention of our readers, of all classes.

June 1, 1839.

J. BUEL, Esq.—Dear Sir—I intended to have written to you immediately on the rising of the legislature, but ill health and other engagements have compelled me to put off till the present time. Is it not vexatious, that

after every thing had been put in such a train as to ensure success, our agricultural and silk bills must have had the go by, under the paltry excuse that they could not be suffered to pass without a full discussion. From Mr. —, I should have expected nothing better; he has been opposed to aiding agriculture from the beginning; but that Mr. — should have done the same is to me surprising. Talk of importing silk to obtain the state premium, under a law for the protection of domestic silk culture, and as carefully guarded as was ours, how absurd? It was enough to make the blood of an honest man boil, to read the debates in the assembly on the agricultural bill. To hear the men whom the farmers sent there for far different purposes, than to abuse them, putting the horse jockey, the blackleg, and the avowed swindler on a par with the owner and cultivator of the soil, is intolerable. How came these men in the assembly? how came they by the education which was supposed to have fitted them for that place, and which in its legitimate effects should have made them gentlemen? They received, the most of them, their education at places for which the farmers of this state have paid above two millions of dollars; farmers by their votes placed them there, and gave them their power; and when farmers asked that they should have the use of some \$25,000 annually, these men had the effrontery to talk of legislative aid to agriculture, being "arrant quackery?" Was it quackery when legislative grants endowed colleges and academies; and fenced the professions with legal enactments, which in effect has made them a privileged class? which has given them a power they are now using, to kick down the men who claim the right to rise to the same level with themselves? Do not understand me as casting these censures upon the whole legislature. We had some noble hearted supporters there among the professions; men whom our opponents dared not meet with an argument, but rather chose that dishonorable weapon, a sneer. But it is a melancholy truth, one apparent to all, that every thing in state legislatures and in congress, is opposed or supported, more with reference to political effect than any thing else: every thing is made subservient to the support or the overthrow of a party. It is one of the darkest of the signs of the times, that the merit or demerit of a cause has little to do with the success or failure of a measure, and that the mass of the people "love to have it so". After all the farmers have no one to blame but themselves. It is for them to say, whether they approve or disapprove the conduct of their servants, or rather as the times go, their masters. It is for them to say whether the sneers of a —, or the atrocious language of a —, shall be submitted to with patient approval; whether when they ask for bread, they shall not only be turned away with a stone, but cudgelled off with blows and flagellation.

There is in my opinion no disguising the fact, that we are fast becoming a people of caste; and that rank in reality, if not in name, is as much felt here as in England. On one side are the producers, on the other the non-producers; on one side the mass of the people, the "laymen" as they were contemptuously called in the late legislature, on the other the professions, as they are in courtesy called. The mechanic and the farmer wish to improve, to rise; and the benefited, and privileged, are determined they shall not. Their rights are secured by law, and they make, they frame, and they expound the laws. They say what interest shall be aided and protected, what depressed or punished for its presumption. They grant millions for colleges to educate their sons, and keep their ranks full; we ask for hundreds or thousands to instruct and benefit the mass, to endow a school of agriculture, or societies for promoting it, and are told by these men we are fools, do not know our own business, and that aid to us would be the vilest quackery and folly. Well, unless I am mistaken, "we bide our time;" we will have our place in the temple we have erected, or we will pull it down.

I know not what you think of these matters, for I have not seen the present volume of the Cultivator, but I think I know your opinion so well as to have no doubt of your sentiments. At any rate I have written freely, for I feel deeply, and on this subject it is the duty of farmers to speak fearlessly. We must not be discouraged, but gird up ourselves for another effort. The subject must not sleep; we can, and we will be heard. We will not forever pay, and receive nothing; forever be filling the treasury to see it squandered on objects and for purposes, which to the improvement of agriculture in consequence, are but as the dust of the balance.

Cure for the Stifle.

Lincolnton, N. C. May 28, 1839.

J. BUEL—Dear Sir—I noticed in your February number of the Cultivator, page 207, a cure for stifle, by external applications; to wit, a decoction of sumach and white oak bark, &c. This is new to me and may be very effectual, but there is a remedy which I have practised, which is certain, simple and quick, which I will communicate, and if you think it worth notice, may recommend it.

"Fasten a strong rope or chain round the foot-lock of the injured leg, and let a strong man hold it; then have the horse moved forward, while the rope is held fast by the person behind, pulling the rope so as to occasion the leg to be extended back as far as it can be drawn. Let this be done three or four times before the rope is taken off."

I have never known it to fail to make a cure on the first application, but the gentleman who gave me the

information, and applied it to a horse of mine, told me that when the stifle had remained for some time, the first jerking might not effect a cure, and in that case it would be necessary to repeat it in a few days. I do not know the cause of the lameness, but was told by the same gentlemen, who informed me of the remedy, that it was occasioned by the slip of a bone, about as big and long as a man's fore finger, at the thigh joint, near the flank, and that the jerking the leg back restored the small bone to its place. If that be the cause, perhaps the decoction mentioned in your February number might assist in the cure; but I never failed to relieve a horse of lameness of stifle, by putting the leg back, as above described, and have cured several.

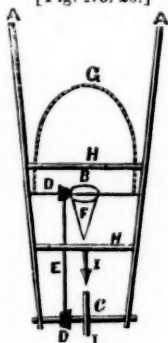
It might be of importance to some to know how to judge when the lameness of a horse is what is called stifle. That can be ascertained by leading the horse over a log, fence or bars, eighteen inches or two feet high. When the horse is stifled he will drag the lame leg over the log, and the pain in the thigh joint, preventing the animal from raising the leg up, as it does in stepping over a fence or log, and when first afflicted, seems to be very painful, and makes the animal sweat very much. Respectfully yours, &c.

ROBERT H. BURTON.

P. S. In pulling or jerking the leg back, care should be used that it should be directly behind, for if turned to the one side or the other, it may be injured. My horse, which was relieved in this way, had travelled a hundred miles quite lame, and sometimes in great pain, and when turned out after one operation, showed no more lameness, and set to playing.

Mr. Whalen's Cultivator.

[Fig. No. 20.]



Whalen's Store, May 17, 1839.

J. BUEL, Esq.—Dear Sir—In compliance with the request of Mr. Bailey, I herewith send you a description of my drill-barrow, with a drawing of the same. It excels, for cheapness and simplicity, anything I have seen.

A A are side pins or arms, 5 feet long, 1½ inches thick, made of white ash or oak. B, tin barrel or cylinder 8 inches long, 5 inches diameter in the middle, 3 inches the ends. C, wheel 13 inches diameter, made of 1½ inch oak plank, banded with hoop iron. D D, pulleys or wheels, turned tapering, 5 inches diameter at large end, 5 grooves in each. E, band made of cotton, ½ inch diameter. F, hoppers suspended below tin box to catch and carry seed to ground, tapering to 1½ inches in the clear. G, trace chain dragging behind to cover seed. H H, cross ties. I, coulter suspended from cross tie, so gauged as to make a small furrow for seed.

The tin barrel is perforated in the middle with 4 holes, equidistant from each other, large enough to pass a No. 3 shot, or 2 or 3 seeds at a time; about an inch from the end is a hole 1 inch in diameter, for receiving the seed, stopped with a cork. The axle of the tin barrel is of wood, passes through the same, and is about 1 inch diameter. I generally use 2 trace chains instead of 1. With the tapering whirrs, the barrel can be geared to drop faster or slower. I have found it preferable to sow an extra quantity of seed, and thin down in order to get a good stand. A communication appeared a short time since in the Cultivator, recommending to transplant or dibble out the plants. I never could succeed well with the plan, and all that Cobbet and others may have said in its favor will not persuade me to adopt it.

In conclusion, I would say, I grew last season 1,600 bushels ruta bage, large measure, on 2 acres ground.

Respectfully yours,

SETH WHALEN.

Physiology—Vegetable and Animal.

J. BUEL—Dear Sir—By the way of extracts, I now further proceed to observe, that while all writers agree, that the origin of the vegetable kingdom is by generation, its growth by nutrition, and a termination by death, but in an organized structure and an internal living principle; physiologists differ in the powers with which the living principle is endowed, and the effects it is capable of exerting. In the plant it is limited, so far as we are capable of tracing it, to the properties of irritability, contractibility, and simple instincts; in the animal, it superadds to these properties those of muscularity, sensation, and voluntary motion.

There have been, indeed, there still are, physiologists who, not adverting to the extraordinary effects, which the power of irritability is capable of producing, when roused by different stimulants, and under the influence of an internal and all-pervading principle of life, operating by instinctive laws and instinctive actions, or those, as we shall show hereafter, which are especially directed to the growth, preservation, or production of a living frame, or any particular part of it,—have conceived plants as well as animals to be possessed of sensation and muscular fibres; and as sensation is the result of a particular organ, and the organ producing it is connected with various others, have, at the same time, liberally endowed them with a brain, a heart, and a stomach; and have very obligingly permitted them to possess

ideas, and the means of communicating ideas; to fall in love and to marry, and thus far to exercise the distinctive faculty of volition. The whole of which however, is mere fancy, grounded altogether upon an erroneous and contracted view of the effects of the principle of irritability, when powerfully excited by the influence of light, heat, air, moisture, and other causes.

In reality, such kinds of loves and intermarriages are not peculiar to plants, but are common to all nature; they exist between atom and atom, and the philosopher calls them attractions; they exist between congeries and congeries, and the chemist calls them affinities; they exist between the iron and the loadstone, and every one denominates them magnetism. Nor let it be said, that in these cases of mutual union, we have nothing more than a mere aggregation of body; for we have often a third substance produced, and actually generated, as the result of such union, far more discrepant from the parent substances, both in quality and feature, than are ever to be met with in vegetable or animal life. Thus, if an acid be married to an alkali, the progeny brought forth will be neutral salt, possessing not the remotest resemblance to the virtues of either of its parents. In like manner, if alcohol be married to any of the more powerful acids, and the bans be solemnized over an altar of fire, the offspring engendered will be a substance called ether, equally unlike both its parents in its disposition.

But in this it may be said that we have no instance of a multiplication of species; only the production of a third substance; yet in many cases we have instances of multiplication also. Such especially are those wonderful increases that occur in the case of ferments and contagions.

A few particles of yeast lying dormant in a dessert-spoon, are introduced into a barrel of beer, or of any other fermentable fluid, and in a few hours propagate their kind through the largest vessel that was ever manufactured; so that at length every particle of the fluid is converted into a substance of their own nature.

The terms loves and marriages will just as well apply to these as to the vegetable creation. The cause of the respective unions, and of the changes that take place in consequence of such unions, are nothing more than elective attractions; in the mineral and gaseous kingdoms produced by what chemists have denominated the principle of affinity, and in the vegetable, by what physiologists have called the principle of irritability.

No experiment or observation has hitherto proved vegetables to be possessed of any higher powers than those of irritability, contractibility, and those instinctive energies which we shall hereafter show, are dependent upon the principle of life.

Plants, then, like animals, as has been already observed, are produced by generation, and through the medium of ova or eggs. The exceptions to this common rule are few, and they occur equally in both kingdoms. The egg of the plant is its seed; which is sometimes naked, but more generally covered with a pericarp, or called in popular language, pod. Stripping off this outer covering, we find the seed to consist internally of a *corculum*, or heartlet, and externally of a fleshy substance, surrounded with a double integument, sometimes single, and sometimes bifid; these are called seedlobes or seed leaves. In the common kidney-bean, we have as striking an instance as in any plant, just peeping in two distinct segments above the ground, as soon as the seed has begun to germinate. The cotyledon is that part necessary for the germination and future growth of the seed, and may be denominated its lungs. Plants possess lymphatics and air vessels: through the former of these it absorbs the moisture of the soil into which it is plunged, decomposes a part of it into its elementary principles, and conducts these principles, together with the undecomposed water, to the corcle or heartlet, which becomes stimulated to the process of germination by the oxygen thus set at liberty. It is the corcle which is the true *punctum saliens* of vegetable life, and to this the cotyledon is subservient. The corcle consists of two parts, an ascending and a descending; the former called its plumule, which gives birth to the trunk and branches; the latter named its rosetel, which gives birth to the root and radicles. The position of the corcle in the seed is always in the vicinity of the hilum or eye. The first radicle or germinating branch of the rosetel uniformly elongates, and pushes into the earth, before the plumule evinces any change. The radicles consist chiefly of lymphatics and air-vessels, which serve to separate the water from the soil, in order that the oxygen may be separated from the water.

Hence originates the root, unquestionably the most important part of the plant, and which in some sense may be regarded as the plant itself; for if every other part of the plant be destroyed, and the root remain uninjured, this organ will regenerate, and the whole plant be renewed; but if the root perish, the plant becomes lost irrecoverably.

The solid parts of the trunk of the plant consist of cortex, cuticle, or outer bark; *liber*, cutis, or inner bark; *albumen*, or soft wood; *lignum*, or hard wood; *medulla* or pith. The trunk enlarges, by the formation of a new liber or inner bark every year; the whole of the liber of one year, excepting its outermost layer, which is transformed into cortex, becoming the albumen of the next, and the albumen becoming the lignum.

All the concentric circles which are produced in the trunk of a tree by the growth of every year, are still visible after the conversion of every other part into lignum or hardwood, and we can trace its age with a considerable degree of certainty, by allowing a year for

every outer circle, and about two or three years for the complete lignification of the innermost.

The respective vessels of the vegetable system are adduct and reduct, or arteries and veins; the arteries or sap vessels may be seen by the naked eye; the veins or returning vessels bring back the elaborated sap from the leaves to the liber for the new layer of the existing year.

The lymphatics lie immediately under and in the cuticle; immediately below these lie the adduct vessels or arteries; they are the largest of the vegetable vessels, rise from the root and communicate nutriment in a perpendicular direction. Interior to these lie the reduct vessels or veins; which are softer, more numerous, and more minute than the arteries.

This double set of vessels is possessed of an opposite power, and acts in an opposite direction, the one to convey the sap or vegetable blood forwards, and the other to bring it backwards; being thus sufficiently able to establish a circulatory system.

It should be observed, that the matter of fibrine, or the principle of the muscular fibre which exists in animals, also exists in vegetables. Dr. Hales cut off the stems of vines in the spring, and by fixing tubes on the stumps, found that the sap rose in many instances to the height of thirty-five feet. Tubes have been fixed to the large arteries of animals, as near as possible to the heart, in which the blood did not rise higher than nine feet.

Plants are also possessed of cutaneous secretants or perspiratory vessels; and in many plants the quantity of fluid thus discharged is very considerable. Dr. Hales in a very accurate set of experiments determined that the sunflower threw off or perspired nearly half its own weight in twenty-four hours.

Plants, nevertheless, do not appear to have the smallest basis for sensation, admitting that sensation is the result of a nervous system. The vessels of plants do not appear to possess any muscular fibres, yet we have evident proofs of the existence of a contractile and irritable power from some other principle; and a variety of facts occurring in making it highly probable that it is by the exercise of such a principle that the different fluids are propelled through their respective vessels; we have abundant proofs also that a contractile power may exist in dependently of muscular fibres in the animal system.

In what part of a plant the vital principle chiefly exists, or to what quarter it retires during the winter, is not known, and we are equally as ignorant in respect to animal life. The plant yearly thrives and increases in bulk, puts forth a new progeny of buds, and becomes clothed with a beautiful foliage of lungs for the respiration of the rising brood; and with a harmonious circle of action, that can never be too much admired, furnishes a perpetual supply of nutriment, in every diversified form, for the growth and perfection of animal life, while it receives in rich abundance, from the waste of diminution, and even decomposition of the same, the means of new births, new buds, and new harvests.

Thus every thing lives, flourishes and decays; every thing dies, but nothing is lost: for the great principle of life only changes its form, and the destruction of one generation is the vivification of the next. Yours, &c.
S. W. JEWETT.

Great return of capital laid out in agriculture.

Metuchen, N. J. June, 1839.

J. BUEL, Esq.—Dear Sir—In conversation with a gentleman, recently returned from England, who has had opportunities of visiting some of the best farms in the most improved agricultural districts of that country, and whose judgment in all matters pertaining to the soil is well matured both by study and practice, I was surprised to hear of the enormous difference in the results of agriculture between that country and our own. As an instance of the profits generally derived there, by men who commence farming, without any acquaintance with the practical department, but with only that knowledge which may be acquired by study, and judgment based upon observation of the methods and practice pursued by others, he stated, that he had visited a relative, who six years since, leased a farm of six hundred acres, at a yearly rent of seven hundred pounds, equal to about three thousand five hundred dollars. Now this to us would appear a good price to pay for the purchase of the same amount of land. Yet it was no more rent, than ordinary good land would readily command there, at that time. But by many who were not so well acquainted with the much ridiculed theory of agriculture, who had not applied themselves to the study of those sciences which are requisite to a correct and judicious management of any soil, and who were in fact ignorant of the very nature, and qualities of the soil, they were themselves laboring to obtain a competence from; by many such, the undertaking was thought, owing to the previous occupant's ill success, as next to folly itself. Not so with the present lessee. Although he had never "held the plough, or driven," and perhaps to this day, has not yet "fretted the skin from off his maiden palms," yet from acquired knowledge of the properties, and capabilities of every soil, when treated according to the manner indicated by its qualities, and by a liberal system of feeding as well as cropping that soil, he has been enabled not only to pay the apparently enormous rent above mentioned, but also, to reap a rich reward for his enterprise.

For the first two or three years, he sunk annually about fifteen hundred pounds; but this was expected, as from the situation in which he found the land, the most lavish expenditure was required, to bring it up to

that state of productiveness which he knew it to be capable of. Yet this was willingly afforded; not with that blind recklessness with which many of our gentlemen farmers commence operations, but with strict attention to the aptness of his measures, and with the view constantly before him of their future and lasting benefit to the soil. And while liberality was the ruling sentiment in all his operations, yet a just economy both of ways and means, was never lost sight of. I have given you as yet, only an idea of part of the expenditures; I will mention a few more, that when the profits are named, they may not seem disproportioned, or that the whole system may not appear too chimerical to encourage gentlemen of capital to pursue it in our own country. Among other items he mentioned, that it cost him every year about two hundred and fifty pounds, one thousand two hundred and fifty dollars, for oil cake, and that he yearly made use of two thousand bushels of bone dust, the cost of which was of no consequence, as he would have it at any price. That into his barn yard there was carted every morning, a large two horse cart load of straw, and that he used a root slicer that with two men, would cut three bushels of turnips per minute.

These few particulars may enable the initiated to account for the success attendant upon his undertakings, and to understand how, in favorable seasons, he manages to make one thousand pounds, or five thousand dollars net profit from a farm of about six hundred acres.

Culture of Corn.

Setauket, Suffolk co. May 18, 1839.

JUDGE BUEL—Sir—For some time I have thought of offering my mode of treating the corn, which I consider the most important among the grain crops; and the springing of the young plants prompts me again to submit it. Whether manure has been spread before ploughing or only placed in the hills afterwards, I adopt the same practice. As soon as the corn has got up, so that the rows or lines can be distinctly seen, I run the plough through as near to the hills as may be without displacing the plants, to the depth of five inches, throwing the earth from the hills; if moles or mice are plenty in the field, both ways, if not, only one way. The rows are then gone over with the hand hoe, the hard surface or crust immediately about the plants stirred and broken, and the contiguous weeds or grass destroyed: this is the first dressing. After about ten days, set in the plough in the same manner as before, if it has been ploughed through only one way; if both, reverse the furrows and let the hoe be used to loosen the earth about the plants, and to draw a little fresh soil to the hill, at the same time eradicating all weeds and grass near the plants. Now we have ended the second lesson, and will be ready at the proper time for the third and fourth, or more, as the soil or season may require, with the cultivator or harrow to break down small hillocks or ridges, and to keep a soft surface between the rows, that will absorb the showers or dews, when a hard surface would be but little benefited, taking care at each time, to draw a little new mould to the hill, yet leaving it at the last dressing with a wide square hill, but slightly elevated. This little rise about the corn hill will help to support it at the autumnal gale, and will not turn the showers off to the injury of the crop. This management may seem not exactly orthodox; but I fancy I derive some advantages not to be obtained by the use of the harrow or even cultivator alone. Those mischievous miners, the moles and mice, are more effectually opposed in their operations, a deeper and softer bed is prepared for the roots to strike into, and greater extent of surface is exposed to be heated by the sun's rays; which is in effect protracting the summer a week or ten days, time enough not unfrequently to save a crop. A common saying with our farmers is, corn only wants hot weather; and the fact is notorious, that a fair crop of corn may be obtained by nice management, in a season so dry that any other grain crop would fail almost in toto. The harrow and cultivator scarify the ground, but do not lay it open with a bold incision, nor leave the corn hill on a prominent ridge or hillock at the commencement of growth, when nothing but heat seems necessary to the vitality and health of the plants. If it be objected, that by this use of the plough we assist the escape of vegetable food, in the form of carbonic acid gas and volatile alkali, I reply it may be so, to the amount of six or eight per cent, an inconsiderable matter compared with the accelerated maturity of the crop. Should you deem these remarks of consequence enough for insertion in the Cultivator, they are at your service. Respectfully yours,
ARCH. JAYNE.

The Silk Business.

Goshen, May 12th, 1839.

J. BUEL, Esq.—Dear Sir—The silk business seems to be on the advance in this country. Rapid indeed has been its progress within the past six years, if we consider the quantities of trees raised, as a part of the business.

As almost every one has an opinion of their own, this opinion, if founded on personal observation & experience, might be worth committing to paper, especially as there is so much yet to be learned upon the subject; I have taken the liberty to trouble you with a few of my thoughts upon the subject, presuming that you will not suffer anything to have a place in the columns of your paper, which would not tend to promote the end for which it was designed. The business of making silk in this country, will undoubtedly, at no very distant period, be a great one. Many of our best farmers, who are now deterred from engaging in the business through igno-

rance or fear of the expenses incident upon a new business, will, when they see from the experiments of their more enterprising neighbors, the ease with which the operations are performed, that it is as simple as almost any branch of husbandry, and more than all, that if properly managed, it yields a rich return from a small investment, be much more ready to engage in it. Yet at the commencement of the business, some judgment and foresight is necessary, more especially in the selection of the right kind of trees.

The white mulberry is a good hardy variety and produces silk of good quality, but the quantity of foliage it produces to the acre is much less than that of some other kinds.

Immense quantities of the *morus multicaulis* have been grown in this country, but I suspect more for the purpose of speculation, than from any desire to promote the manufacture of silk. I had occasion not long since to take a journey into Massachusetts, on business, and while in Amherst, I became acquainted with Mr. Timothy Smith, and several other intelligent gentlemen, engaged in the silk business. Mr. Smith, I considered, as the most candid man I conversed with, and who has been in the business the longest. He commenced in 1832, with the white mulberry, found that the leaves made good silk, but the quantity of foliage produced to the acre was small. He then successively tried the *multicaulis*, *Canton*, and *Alpine*, which he pronounced only a variety of the *Canton*. He gave a decided preference to the two last varieties, alleging as his reasons, that the quantity of foliage to the acre from *Canton* trees, was nearly as large as that of the *multicaulis*, while the leaf of the former seemed to be more palatable to the worms, and did not create disease amongst them, as the leaves of the *multicaulis* did, owing to the quantity of moisture in the latter. The *Canton* proves to be a much harder variety than the *multicaulis*, as he has proved by actual experiment, that they will stand our winters while the *multicaulis* will not. Other experiments and observations which I have not time nor room now to detail, convince me that the *Canton* tree is the best adapted to our northern climate, and when the rage for buying up *multicaulis* cuttings, at 4 cts. a bud has in a measure subsided, and the business of making silk begins to claim a share of public attention, this tree will be more sought after.

I have a piece of ground very mellow, but not very rich, which I intend to sow with ruta baga. Would it be a good plan to sow to buckwheat and turn it under as food for the turnips? Yours with respect,
CHAS. STRONG.

Bloody Murrain.

Black Locust Grove, Mo. May 3, 1839.

Hon. J. BUEL—Sir—I will now give you (and if you think them worthy of it, through you to the public) my own observations and experience about the "bloody murrain," a disease I never heard of among cattle till I moved to this country. I have tried the "tar," sir, to my own satisfaction. It may have cured some cattle, but not one of mine, for I have lost six head of valuable cattle in the last five months with it, and I tried tar on all that I could get to in time to do any thing with, but one, and it has failed, entirely failed, to do any good. Indeed, sir, I have come to the conclusion, that there is no specific for it; but like cholera, some few cases may be cured, but ninety-nine out of one hundred will die. It is a most painful, dreadful disease; those that discharge the blood through the urine and bowels, suffer much less pain (though no less fatal) than those that bleed internally; and I believe the best preventive is regular feeding, and not too sudden a change of food. Now for my reasons for thus believing.

In the first place, the spring and fall are the times in the year it prevails most; the poorest or fattest are the most liable, though some exceptions, both as to time and the order they are in. Last fall I had a very fine heifer (one that had taken the premium at our fair,) in fine order which was the first of mine that took it; she ran in a lot through which I was hauling corn to the cribs, and while we were unloading she would usually gather up the falling ears, and I would throw her the nubbins. On the next first day of the week, she did not get any corn, as the grass in the lot was thought sufficient. On Monday following she died. In the last of February I had two steers that died. It being wet, the cattle did not eat their food clean, consequently they did not receive their usual quantity of aliment; and being weaker than the most of my other cattle, they were kept off, and consequently became excessively hungry. I then had another heifer that I prized very highly. In order to save her, as she was getting poor, I had her fed an extra meal, and the very next day she died. Here I had ample opportunity to try the tar, for from day light till night (and the night before she was well, at which time I began to give her the extra feed,) I had her to operate on, but to no purpose. Well, sir, when grass came and would afford a good bite, one of my neighbors had a bull which he had kept upon dry food. I wished to get some of his calves, and obtained the use of him; turned him on my pasture, quit giving him dry food, and in three days he died. So, then, I conclude that too sudden a change from dry to green, or from green to dry, will produce it; hence its prevalence in the fall and spring. Or permit a fat animal to get very hungry, or a poor one to get very hungry, or unusually

* Mr. Smeally wrote us, after the insertion of his communication, recommending tar, that it had failed with him in some subsequent experiments, which we forgot to notice.—*Cond.*

full, will produce it; and when produced it most generally brings forth death.

While I am writing, I will mention a practice I fear is coming into vogue, which in my opinion is not only dishonorable, but calculated to do harm. It is the custom of puffing certain seeds into notice, and then to cheat the community with them. For instance Baden corn was posted through our newspapers as the brag corn, whether as to number of ears to the stock or yield to the acre. Well, sir, we had some forty bushels brought to our country, and I do most positively affirm, taking the bushel I got as a specimen, there was at least one-fifth wholly unfit to plant, yet it cost us five dollars per bushel. There was not only every variety, from the hard flint up to the common white and yellow, but the nub or blossom end corn, and some of it actually rotten. Again, sir, a man who has Rohans for sale at St. Louis, at eighteen and three-fourths cents for each potato, (as I am credibly informed,) says each potatoe will plant three hills, and each hill will yield one bushel of potatoes. What must be the size of a potatoe hill to get a bushel of potatoes from it? Yours as ever, A. H. F. PAYNE.

N. B. Now, sir, do as you think best with this communication, but if you publish it, let it appear in the best garb you can, for I never was in the habit of writing for the public. A. H. F. P.

New Disease in Sheep, &c.

JUDGE BUEL—Sir—Mr. Bailey solicits information of your correspondents and patrons, respecting a new disease which has recently attacked his sheep, described in the May No. of the Cultivator. By the symptoms therein described, I should attribute the cause, to his sheep partaking too freely of the stock or root of some poisonous plant. A powerful application of quicksilver to the skin sometimes will produce similar symptoms.

Treatment, bleed them immediately after the attack, by opening the vein which lies between the innermost corner of the eye and nose; or bleed them in the nose. By the sheep's taking the blood it answers as a mild purge.

Treatment for blindness.—By the assistance of a quill, blow a few grains of pulverized blue vitriol into the eyes; or for a milder remedy add an equal quantity of fine loaf sugar with the vitriol. I have used the above with good success in removing the film from horses and cattle also.

Breaching sheep.—Good fences are the best remedy for this complaint; but when fencing timber is scarce, I have known the following application to be safe and effectual. Part the skin perpendicularly, about three-fourths of an inch, so as to expose and cut the two cords on each hind foot, (which are about the size of the stale to a pipe,) between the dew claw and hoof; a few days should intervene between the two operations, that one ankle may heal before the other is operated upon. Yours, &c. May 12, 1839. S. W. JEWETT.

On the principle of fear or timidity in Horses.

MR. EDITOR—Sir—I send you the following remarks, trusting that you may find them worthy of an insertion in your periodical; for I presume that any thing that tends to elucidate the nature of that noble animal the horse, comes properly within the province of your remarks; although the appellation of your pamphlet is the Cultivator.

It has been asserted by some authors, whose names I do not recollect, "that the superior knowledge that mankind possesses, is partly owing to the power of handling or feeling that they have, and that were it not for this faculty, their knowledge of objects would be very vague and indistinct." This I have no doubt is correct, for it is very probable that a child has but a very imperfect notion of objects until he begins to feel and handle them. A boy about a year old is frequently frightened at objects, such as a bright scarlet cloak, a large dog, &c. and this kind of fear continues, until he acquires some knowledge of their nature by feeling and handling of them; this faculty being the great corrector of our sight. It is very probable that a horse is in the same situation; nature never having bestowed upon him the faculty of handling or feeling, his knowledge of objects must be very vague and indistinct. As a proof that this is the case, it may be observed, that horses are not any more frightened at unusual sounds than mankind are, and they are on about an equal footing with man in regard to the sense of hearing. An uncommon sound frightens a man as much as it does a horse; the former's reasoning powers will no doubt some times refer him to the sound, but at an unusual noise with which both are unacquainted, the one will be as much frightened as the other. It may be observed further in proof of my position, that all animals that possess the power of handling are more intelligent than those that have not this faculty. The elephant, the monkey, and the dog, are much more intelligent animals, than the horse, the cow or the sheep. A dog by jumping upon objects and pawing on them, acquires a knowledge of their nature and dimensions. A monkey can handle any thing about as well as a man, and an elephant has such a nice sense of feeling in his trunk, that he can pick up a pin from the ground, and this is one reason of his great sagacity. A dog can travel along a great way without seeming to be afraid of any inanimate object, while a horse is continually scared and frightened at such trifling things as the stump of a tree, a heap of stones, &c. But all this may be best exemplified by different animals in passing over a bridge; and as I have lived for a number of years within a few rods of one, I have had fre-

quent opportunities of witnessing their actions. A horse who is not used in passing a bridge, most generally turns round on approaching it, and refuses to pass; he seems afraid, and acts in a manner that would seem to indicate that he knows nothing about the object of his fear, only that it has that impression on his senses, something like a child with a bug-bear. A cow and a sheep act very much in the same manner. But how different the actions of a dog, a monkey, or an elephant. A dog passes over without any reluctance; a monkey would probably do the same. I once had an opportunity of witnessing the passage of an elephant. He approached the bridge carefully, and put on his foot, as if to test its strength, and having done so, he retired to one side; his fear, in this instance, did not seem to arise from any other consideration but that the bridge would not be strong enough to support him; and after his keeper examined the bridge thoroughly, he passed over without much reluctance.

It may be stated as an objection to this method of reasoning, that the domestic cat is an animal possessing the faculty of handling, and is not remarkable for any great intelligence. I differ very much from this opinion; for I consider puss as a clever animal, and she can cuff ears as dextrously as any of our most expert matrons. I have been quite astonished at what I have seen some cats perform, having owned one that could open every door in the house, almost as well as any biped in it. From these remarks, I think it will appear, that the faculty of handling is a great cause of superior intelligence amongst animals, and the lack of it in the horse is one reason of his great timidity or liability to being frightened. But in order to make this appear as plain as possible, I will state one example further. I once caught a species of porcupine, and on bringing it home I introduced it to the notice of a cat. Puss was evidently disconcerted, but on its moving towards her, she gave it a smart scratch or two, and then retired. I next laid it before a dog. He appeared at first embarrassed, but mustering courage, he began to paw it, and at last he bit it; but on finding it pricked him, he kept walking around it in search of a vulnerable part. The last animal I introduced it to, was the horse. He leaned down his head for the purpose of smelling at it. Now this way of smelling, although it may serve a useful purpose for distinguishing the animal food, is rather an awkward way of ascertaining the nature or quality of an object; and as soon as he saw the porcupine move, he started suddenly back, and had he been at liberty, would no doubt have bounded off at full speed. In this instance the horse would never know any thing of the nature of the porcupine, and would be as readily frightened at it at any future time as ever; but the result would be different with the dog or cat, who would probably always recognize it afterwards. But after all, could a remedy be devised for this excessive timidity in horses, and their liability to be frightened, it would, doubtless, be a great improvement. The use of blinds is an attempt at this; but it may be questioned whether they are of any advantage, although they may prevent the animal from seeing so many objects at his side; yet they rather increase than diminish his chance of being frightened, from any thing coming suddenly up from behind. Hoping that these hints thrown out, may be the means of suggesting to some of your ingenious readers, a method by which this dangerous disposition in horses may be ameliorated, I remain, yours truly. J. GLENN.

Morrisville, May 22, 1839.

Canal Repairs.

Schenectady, 16th May, 1839.

DEAR SIR—When the Erie canal was making over the flatlands at Schenectady, I remarked to the engineers, that in all cases where the water was to be sustained by artificial banks above the ground, I thought it would be liable to breaches, unless the banks were sheet piled.

All such observations were treated contemptuously, as presumptuous from observers who did not pretend to make water run up hill.

In consequence of trusting to such banks without sheet piling, they have been broken by the water, and required repeated repairs, till the amount stated in the report of the commissioners of the canal fund, to the legislature, of 3d January, 1839, under the head "repairs," is \$4,284,366.24. And I presume one million more may be added for individual damages by detention in consequence of the breaches. These sums would make a ship canal of the Mohawk river from this to Utica. And before ten years more shall have elapsed, the cost of repairs will probably enlarge the sum sufficient to meet the expense of continuing the ship canal to lake Ontario. And yet we are to jog on, enlarging and repairing the artificial banks, because we began wrong and cannot acknowledge the error nor retract.

The breaches in the enlarged canal will be attended with double the cost of repairs, and more to individuals, because a large sheet of water, when suddenly let loose, will force its way with more than twice the power of a small one. But the banks of the river, being ascending, would not break, nor would the bottom fall out, as that of the canal has done, to the depth of fourteen feet below the ground, by means of quicksand, on the flats in Rotterdam. Respectfully,

D. TOMLINSON.

Soap-boilers' Waste.

Fishkill Landing, May 27, 1839.

J. BUEL—Dear Sir—I have recently learnt that soap and tallow chandlers throw away annually a large quan-

tity of liquid, which they call salt lye. It is possessed of a lye sort of substance, and is so strong that the smallest quantity when applied to vegetables while growing will entirely destroy them. If this sort of lye can be made worth anything to the farming interest, you will do a favor by saying in what manner, in the next number of the Cultivator. We have a very pernicious sort of a weed or plant among us, known to some by the name of snapdragon, to others by stink weed, (bears a yellow flower) which, should it continue to spread in our lots as it has done for some years past, will render our farms almost useless. Information as to the course to be pursued to destroy it will be very highly prized by many of the farmers of Dutchess and Orange counties. Should you tell us how to prevent the ravages of the locust-borer upon the young locust, it will be looked upon as valuable. Yours truly,

A FARMER.

REMARK—The leech, or salt lye, of the soap boiler and tallow chandler, we believe, if thrown upon a compost heap, or sufficiently diluted with water, would serve as a fertilizing material in the soil. It must contain alkali, lime, and probably some oil, all of which will prove beneficial to the soil. Urine is destructive to vegetation, if applied to growing plants in a fresh state; and yet it is a powerful fertilizer when suitably diluted, or mixed with earthy materials, and modified by fermentation. The pernicious weed mentioned by our correspondent we believe to be *linaria vulgaris*, sometimes denominated *yellow toad flax*, a perennial which spreads rapidly in clay grounds. The only means of extirpating it are those we have recommended for the extirpation of Canada thistles, star of Bethlehem, and other perennial incumbrances of the ground—preventing the growth of their leaves by the good culture of hoed crops. We know of no preventive of the ravages of the locust-borer. There are either two varieties of this tree, one of which is not attacked by the insect, or the soils in which they grow make a difference. If our correspondent will cross the Hudson, and visit the farm of Messrs. Hallock, a little below the village of Milton, he will see hundreds, if not thousands of the locust, of thrifty growth, which are not at all affected by the borer. These produce very few seeds.—*Cond.*

Questions and Answers.

Dover, Md. May 31.

JUDGE BUEL—Can your inform me who keeps hogs on an extensive scale, that I may get some information? Do you know of any kind of grass that could be cut by the middle of July or sooner, so as to yield a good return on a sandy loam?

Our corn crops are coming on very finely; plenty of rain, though at present rather cool. I was thinking as soon as my wheat is cut of sowing oats on the stubble immediately, and plough it under so as to afford a green crop, on which to spread lime in the fall for corn next year; is it a good plan?

P. S. RUTH.

ANSWERS.

For pig farmers see our advertising sheet for Feb. Lucern will grow on a sandy loam, if rich and clean; and may be cut in Delaware by the middle of May, and will yield an abundant return. The oat crop after wheat may afford pasture, and may give some fertility to the soil, if ploughed under before it is destroyed by frost.

More "Last Words" About Millers' Tolls.

Rahway, May 15, 1839.

MR. J. BUEL—Dear Sir—It would not have been necessary for me to say anything more concerning millers' tolls, had not Mr. Walton's communications appeared in the last volume of the Cultivator; as they have not proved that grain contains the quantity of air they have asserted. But since they thought proper to have it inserted in this volume; and as you are receiving such a multitude of new subscribers to every new volume, they will see but one side of the question; therefore permit me to occupy a small space in your next number with a final and concise review of our former controversy. I will commence with Mr. David Walton's first communication on this subject; he has here asserted "that in solid bodies there is fixed air," of which fact perhaps nine-tenths of the agricultural community are ignorant. I will here observe, that it is hopeful that ten-tenths of the community may forever remain ignorant of this ignominious blunder of Mr. D. Walton's: Does he presume to assert that nothing is solid within itself? if so, he must be deficient of common sense, in so publicly exposing his ignorance; for this has forever been one of the foundation stones of all philosophers, that every substance or matter is solid within itself. I will here inform him that the minuteness of matter is far beyond all human conception. To illustrate this, I will introduce him to divisibility, and here inform him that there can be no substance of matter so small but that it can be divided, and it will have an upper and under side. I will quote the illustrations of D. Blair, under the head of divisibility. "1st. Since matter can never be annihilated by division, so we can never imagine it to be cut into such small particles that any of them shall not have an upper and under surface, which may be separated if we have instruments small enough for the purpose. 2d. It would be absurd to say that the greatest mass has more halves, quarters, or thousandth parts than the smallest particle of matter;" to prove that every particle of fluids are solid, I will not presume to go beyond the assumption of wise philosophers. I will quote Blair's observations under the head of hydrostatics. "Obs. 1. Heat or motion is supposed to be the cause of fluidity: for example, ice without heat is a solid—with heat, it becomes a fluid in water—and with more heat an electric fluid in steam. In the first state the atoms are fixed in crystals; in the second, are thrown into intestine motion; and in the third state, are forced asun-

der with an amazing expansive force." "2d. Philosophers have usually assumed that the particles of fluids are round and smooth, since they are so easily moved among one another." This supposition will account for some circumstance belonging to them. If the particles are round, there must be vacant spaces between them, in the same manner as there are vacancies between cannon balls that are piled together; between the balls smaller shot may be placed, and between them still smaller, or gravel or sand may be diffused; in a similar manner a certain quantity of particles of sugar can be taken up in water without increasing its bulk; and when the water has dissolved the sugar, salt may be dissolved in it and yet the bulk remain the same; and admitting that the particles of water are round, this is easily accounted for. Mr. Walton further states "that he has found by careful experiment in grinding rye, (weighing fifty-six pounds per bushel,) that it lost three and a half pounds; and many experiments in grinding grain it lost from one to five pounds per bushel; which loss could not be accounted for any way, better than supposing it to be the escape of fixed air."

In answer to which, I asserted in my first communication that Mr. D. Walton presumed to make it appear than one bushel of grain contained more than one bushel of loose air; and then go on to prove it by the philosophy of D. Blair, which says "that air weighs three hundred and twenty-four grains for every one thousand cubic inches, and that it is nine hundred times lighter than water." I then state that there is two thousand one hundred and fifty and forty-two one hundredths cubic inches in a bushel; therefore, if one thousand cubic inches of air weighs three hundred and twenty-four grains, two thousand one hundred and fifty and forty-two one hundredths cubic inches of air will weigh one ounce nine dwts. but no more; and before he confines more loose air in a bushel of grain than one ounce nine dwts. he will be obliged to employ some artificial power to aid nature in her wonderful and mysterious work of its germination.

In answer to which, Mr. D. Walton says, "the one-tenth which is the lawful toll in this state, with what the millers in this part of the country extract in the process of cleaning, (and that too without the waste of grain,) would amount to more than the tenth part of the original weight of the grain when taken to mill; and until he proves that there is no unavoidable diminution of weight in the grinding of grain, or that it can be attributed to some other cause more certain than the departure of fixed air, my statements remain sound and unrefuted. And further, Martin's philosophy expressly says, that this fixed air as it is roused, expands itself into a million times more space than it filled before in a dense body; or in other words, in the position in which nature placed it "in her wonderful and mysterious works of formation." In answer to which I stated, that I had ground and bolted under my own inspection, two bushels of wheat, weighing one hundred and twenty pounds, and that it lost in the process of grinding one and one-fourth pounds, on the two bushels, which of course, will make a loss of ten ounces on one bushel; and then assert that I do not believe that the average loss in grinding twenty bushels would exceed seven ounces per bushel. Now the mystery is, how to account for this loss. I will account for a part of it in two ways, viz. first, the dampness of the grain is absorbed by the heat caused by the friction of grinding, (which dampness or water, Blair says is nine hundred times heavier than air;) of this fact any person may convince himself by putting his hand up in the top part of the leader that conveys the flour from the stones; he will find it wet and pasted with damp flour; and in the second place, flour coming from the stones, hot and perfectly dry, the finest and dryest of it will rise into the air, there remain until impregnated with its dampness, then settle into every part of the mill. I then say, I consider it much more philosophical to attribute this loss of weight to the dampness, or water contained in the grain, than to suppose, as Mr. D. Walton has, that it is all fixed air. I then wish him to prove that there is more air in any species of grain, than the open portions of said grain will contain of loose air, [for if he prefers the term better, air in its natural, free state]; the only way he can make it appear, is, that the air is condensed, which I will not admit without plain proof. I say it is confined, if there should any appear in the grain, but do not believe it to be condensed. It is folly to assert that there is condensed air in grain; for this reason, before it can be condensed, the grain must diminish to a smaller substance than that from which it originated. Or as I have before stated, if it contains air at its formation, the air has more room as the grain grows; the grain may shrink some from the size it once attained, but before it can condense the air it must shrink to a smaller substance than from which it sprang; it may be argued that the grain receives the air all the time it is growing; if so, the air is not condensed; for that moment the grain begins to shrink, the air will leave it through the same passage it was received. I asserted that I thought he would be disappointed if he expected to convert nine-tenths of the agricultural community to the belief, that the grain they raised is even one-hundredth part air. I will here inform him the number of bushels of loose air, (or air in its free, natural state,) it will take to weigh 1lb., 5lbs. and 12lbs. It will take to weigh one pound or sixteen ounces, eleven bushels and one quart, to weigh five pounds, fifty-five bushels five quarts, to weigh twelve pounds, one hundred thirty-two bushels, twelve quarts; now in the first place this one pound or eleven bushels, one quart of air, is to occupy a space of only 1-60 part

of a bushel, (if it should be wheat weighing 60 pounds per bushel,) for if there is a loss of 1 pound, that is one-sixtieth of a bushel, and if this loss is condensed air, it will take 11 bushels and one quart of loose air to weigh 16 ounces or 1 pound, and provided his loss is 3 1-2 pounds as he has stated it to be, in 56 pounds of rye $\frac{3}{8}$ if this loss is fixed air it will measure 38 bushels 19 quarts, and must occupy a space of $\frac{3}{8}$ parts of a bushels. As this is my last communication upon this subject, I will observe that I have considered what Mr. Silas Walton has had to say upon this subject, beneath my notice. He has been quoting from Oliver Evans, Martin, and Blair, but is so self conceited, that he thinks their wisdom is nothing compared with his. I will assure him before he confines one-half the quantity of air he wishes to make exist in a bushel of grain, it will explode, and fracture his skull notwithstanding the thickness it appears to be. Respectfully yours,

WILLIAM A. STONE.

Attention to Silk recommended.

Shrewsbury, N. J. June 19, 1839.
JUDGE BUEL—Dear Sir—Will you through the medium of your widely extended paper, call the attention of the American people to this one single subject, viz.:—*Growing raw silk in the states for home or foreign market, as an additional resource to the country, free from a confusion with every other subject which various writers and speakers appear to confound with it; such as importing silk goods, manufacturing silk goods, the advantages of wearing silk, &c.* My object is to concentrate the public mind to one single subject at once.—The question is not (in my humble opinion,) whether we import twenty-five millions of dollars worth of silk annually, or fifty millions, or none at all, or large amounts in iron, hemp or other staple or fancy articles; for if we imported one hundred millions in silk, and could export to advantage the same amount in the produce of our country, we need not go to raising silk, (or seek any other resource to pay the debt,) or to manufacturing silk to prevent it. But the first grand question is, *Does the whole of our imports exceed our exports? and if so, how much?* In investigating this question, if a balance is found against us, how shall we improve our system of national economy, so as to keep an even account with other nations? My answer is, *increase the resources of the country, in some way or other, equal to the wants of the people, or such revulsions as the past will be a natural consequence of trading beyond means, and will return again in due time, as sure as the return of summer and winter.* If we had a despotic government, the despot might retrench expenses of living, the peasantry could be compelled to dispense with silk, and all other imported goods, both dry and wet; but free trade is the motto of a free people; so retrenchment is out of the power of a free government. A free and sovereign people will eat, drink and wear what they please if they can get it. Now how shall we prepare to pay the balance annually counting against us in Europe, or turn the balance in our own favor? My answer is, go to raising raw silk in the north and west, and on the exhausted cotton and tobacco lands of the south, and add that to the cotton and tobacco of the south, and if the tables are not turned in less than ten years, the American people are not what I take them to be. We want union of effort. It interests the whole community. It would puzzle me to tell which class would be most benefited by the improvement, the commercial, manufacturing or farming community; or the north, the west or south. In my humble opinion, it would tend to cement the Union, and secure peace at home and abroad; it will make the interest of all of the states more generally one interest; it would be a good backer to our commercial community, and raise and secure their credit abroad, and would tend to facilitate trade, and secure peace with other nations, and especially England, as she could obtain her raw silk of us in trade, and can raise none herself. Now would not raw silk equal in amount to the cotton in the south, be a help to the commercial class in times like the past, and would it not enable the manufacturing class to set their wheels agoing sooner in case of another revulsion? And would it not be a profitable additional branch of farming?—Now, sir, will you give the ideas of an illiterate farmer, (submitted with humble deference,) a proper investigation, and expunge or add what you think proper, and couch the whole in proper language, and lay this single subject fairly and squarely before the American people, and I'll be bound they'll not be slow in seeing their own interest. Yours, &c.

LYCURGUS.

EXTRACTS.

On the Selection of Grain Seeds, Roots, &c.

[From the Mark Lane Express]

The grand and distinguishing characteristic of plants over inorganic matter—that which characterizes their latent powers and living functions, is their susceptibility of improvement; animals have it to a certain degree, but not nearly to such an extent as plants, for the productive faculty of the former cannot be increased like that of the latter. As is well remarked by Mr. Sharon Turner, most agreeable and surprising transformations have arisen from this property. The rose is the product of cultivation; the original plant from which all our beautiful varieties have proceeded is considered by botanists to have been the common wild briar. Our plums are cultivated descendants of the sloe; the peach and necta-

rine of the common almond tree; filberts are the improvements of the wild hazel; the delicious apples whose species may now be reckoned by hundreds, are the cultivated successors of the small austere crabs and wildings, which swine will scarcely eat; the original pear is a petty fruit, as hard and crude as the former; our cauliflowers, cabbages, and other domestic vegetables, may be regarded as almost artificial products, so much has human skill had to do in their production.

If then so great a susceptibility of improvement exists in the productions of horticulture, it becomes a question of great interest and momentous importance to ascertain whether or not the different species of grain, roots, and grasses, employed in agriculture are possessed of a like inherent susceptibility. It is a well known fact that grain, if allowed to degenerate, returns into a state very similar to that of some of our coarser grasses, which of itself is a very strong argument as respects the point at issue. But we have still more unequivocal evidence that wheat, even in what may be denominated its present improved state when compared with the inferiority of its supposed original, is possessed of the principle of productiveness to an extent fully as great as the vegetables mentioned in the above quotation. In proof of this, we would refer to the experiments instituted by Colonel Le Couteur on the different varieties of wheat, as fully detailed by him in a valuable pamphlet which we have just perused, and which we would recommend to the careful consideration of every agriculturist. Colonel Le Couteur began seriously to cultivate the important plant of wheat so as to procure the several soils distinct from each other, and at the same time note the experiments made on the culture, produce, weight of the grain, and qualities of the corn, flour and straw. He has kept a most minute account of the experiments, and taken the greatest care to preserve the best sorts in their purity, and the result of his experience is, that he believes the proper mode of cultivation of wheat is yet unknown or unpractised. The Colonel, before he turned his attention to the selection and purification of wheat, considered his crops tolerably pure, yet on Professor Le Gasca, a celebrated botanist, examining them, he selected from them, twenty-three sorts, of which some have since been discovered to be three weeks later in ripening than others, which circumstance accounts for the many shrivelled, ill-grown grains in a sample of wheat, arising no doubt from the unequal growth of the many varieties that link in the purest crop. The importance of ascertaining the qualities of the different varieties of wheat, is well exemplified by Col. Le Couteur in respect to their relative value as to produce of straw. The quantity of straw produced from a single ear of one of his best varieties, No. 1, Jersey Danzig, was 3lb. 3oz. of wheat, and 3lb. 9oz. of straw, only 6oz. more straw than wheat; No. 2, "Album Densum," produced 2lb. 12oz. of wheat and more straw than wheat; No. 5, "Coturneum," six ounces more straw than grain; and No. 8, "Koelen," 4lbs. 4oz. of wheat and only 3lbs. 13oz. of straw. The next, No. 9, the Red Compact, produced only 2lb. 9oz. of wheat from 3lbs. 15oz. of straw, an excess of one pound six ounces of straw over the grain in this last, whereas the former, No. 8, a most excellent and superior variety, there was an excess in grain of seven ounces over the straw. Col. Le Couteur justly observes, that by a proper system of culture, it must appear obvious from these facts that wheat should be brought to such perfection, as to produce more grain than straw; Nos. 8, 10 and 13, varieties selected and tested by actual practice, having done so. Now by reference to the article "British husbandry" chap.—page 154 of that excellent work, the farmer's series of useful knowledge, we find it stated that "the straw is generally reckoned to be about double the weight of the grain." We believe this may be perfectly correct as far as regards ordinary husbandry, yet if the results obtained by Col. Le Couteur's experiments are of any value, we must conclude that the proper culture of wheat, if known, is unpractised.

These experiments, however, were not confined to the weight or productiveness of the different varieties of wheat; on the contrary the Colonel continued his researches from the straw and grain, on to the meal itself, in order to be fully satisfied which of the sorts under experiment contained the greatest proportion of meal or flour, and the result nearly proved that the most productive sort in grain was also the most farinaceous. A circumstance of a very important nature was elucidated in the progress of these experiments, and proves the comparative advantages to be derived from actual practice, skill, and observation, to that of science alone for the purpose of testing and proving the merits of the different varieties of grain. Professor Le Gasca with all his experience and botanical research, was impressed with the notion, that a variety of No. 14 was one of the most productive, while it was proved by actual experiment to be the most inferior of the fourteen sorts tested, evincing the positive necessity of comparative experiments to ascertain the relative produce of wheat, which the theory alone, even of the learned Professor, could never have discovered, he merely having judged from the external appearance of the wheat, its squareness and compact form; than which, nothing could have proved more deceptive.

We have frequently in the course of these letters inculcated the advantages of a change of seed grain, and the adaption of certain districts for producing the different varieties in greater perfection, than that of others, and we are glad to observe, that Col. Le Couteur arrives at the same conclusion. It indeed must inevitably stand to reason, that the fine white wheat which is grown on a rich fertile loam suitably retentive of moisture, can

never be the proper sort to be sown on a poor black soil, such as Bagshot Heath, which of itself is incapable of retaining or attracting moisture. But it will not be denied that if a red or coarse variety, equally productive as to quantity, though perhaps less farinaceous, could be grown on such a soil, it would be an end greatly to be desired, and of much national importance. An observation made by Col. Le. Couteur leads him to believe that such will be the result. In a piece of land which had been ill prepared, and was poor and out of condition, a crop of white wheat had been sown; it scarcely grew three feet in height, but among it was a plant of fine, tall, rich, brown wheat, with a larger round, but rather coarse grain. It proved a highly productive variety. Had he happened to have sown the field with all such, instead of having only had twenty bushels per acre, subsequent experience has shown him that he would probably have had forty.

In Colonel Le Couteur's observations on the selection of seed grain, he remarks—"It has frequently puzzled me much to imagine, upon what principle some writers have recommended for seed a sort of inferior grain, the refuse of a crop, after all has been sent to the market. How a principle so entirely contrary to the whole economy of nature could for a moment obtain it is difficult to conceive. For even from the finest of seed, after five years of experiments, I am persuaded that for a crop one-tenth of the best grain perishes, or is destroyed by birds, mice or insects; but from some sorts which looked sickly, and were purposely sown singly, grain by grain, in 1833, I found that a liver-coloured variety which, from the appearance of the ear, promised to be highly productive, though the grains were ill-grown, thirty-three grains out of seventy-two died, which induced me to discard it as being too delicate, its grains being poor and lean, though grown on a rich and well prepared soil. Another variety also from poor ill-fed wheat, lost forty-nine grains out of sixty-two. A sample of golden-drop, which I got at Mark-lane, tolerably well grown, had seven varieties in a handful, and thirty-four of these died out of seventy-two grains. Whereas from other healthy plump grains of several varieties, only nine, ten and twelve died out of seventy-two grains of each variety. In 1834, the "Belle Vue Talavera," was so well grown and plump, that of three rows of seventy-two grains each not one died; of No. 1, Danzig, only three to four in three rows of the same number; and of No. 2, "Album Densum," only eight from the same number died. From one hundred and forty-four grains of a new white Spring Wheat, a very rare, hardy and promising variety, only ten died.

My general observations lead me to believe, that when wheat appears to grow lean and poor looking it should be discarded from the locality, after a fair trial—say after the third year, as the second only might be the result of climate, or the want of being naturalized to the soil. The first trial should be made from seed of the best quality: if this fails after the third year, it is evidently unsuited to the soil and climate, and a new sort should be introduced. It must be obvious that lean and shrivelled wheat is not so likely to nourish the young plant just starting from its embryonic state into life, with a mere miserable skin of a parent to live upon, as the fine rich nutriment to be met with in a plump, round, farinaceous grain, full of meal.

The nice discrimination and care requisite to mature a pure and distinct variety of grain, is well exemplified in Colonel Le Couteur's own practice; for in the progress of dibbling out the grains of four ears of wheat which were selected to him by Professor Le Gasca, he remarked a great discrepancy in the grains of each ear; they were not even of the same colour, and differed greatly as to form, some being round, some oval and peaked, some plump but very small, some more elongated, some with the skin or bran much thicker than others; there were also, many with liver-coloured yellow, and dark grains among the white. Colonel Le Couteur therefore recommends the selection of a single grain of a pure and known variety, for the purpose of procuring a sort with a distinct character and of prolific habits; but this subject is so nice, and admits of so many distinctions, that to arrive at this he believes it may be necessary to destroy every female blossom, excepting one, on the plant, which may be selected for impregnation or future experiment; and there can be no doubt that, with due attention, the practice can be established as satisfactorily, as the success that has been met with by those who have attended to the intercrossing of geraniums, now grown of all shades and colours, almost at will.—Indeed, the care which Colonel Le Couteur took in making his selections, and the great number of sorts he found of all shades and colours, forming varieties and sub-varieties, as they were termed by Professor Le Gasca, confirmed him in the opinion that the only chance of having pure sorts was to raise them from single grains or single ears. In reference to this matter, Colonel Le Couteur observes—"It is but fair to add, that even the pains I took in making these first selections amply rewarded my labours, as the produce of my crops was increased from an average of about twenty-three or twenty-five bushels per acre to about thirty-four; and since I have raised wheat from single ears or carefully selected sorts, I have increased my crops to between forty and fifty bushels the acre. Hence I have no doubt, that with extreme care in obtaining the best and most suitable sorts of wheat, that land, in high till, with fine cultivation may be made to produce sixty or seventy bushels per acre." Colonel Le Couteur further remarks, that "much has been judiciously written on the growth and cultivation of wheat, which has tended to a material im-

provement in those farms where care has been taken, perceptible even to superficial observers; but no writer has yet called the attention of the agricultural world to the cultivation of pure sorts, originating from one single grain. It is contended that this has been the root of all the evil; many have attempted to begin well, but few, if any, have thought of commencing from the original, and persevering and keeping it pure. This idea struck the author so powerfully on the first conversation which he had with the Professor Le Gasca, that it has never quitted him. His project was considered visionary and unattainable. Old farmers said, that as no farmer in the world had ever thought of separating and classing wheat it could not be done; it was impossible to get a pure crop! The bees would mix the farina, mice would mix the grain, birds would do the same; if it had been feasible, it would have been tried before. Corn-factors assured him, that the climate of England was not calculated for the growth of such fine skinned wheat as that of Danzig, Volhynia, and Sandomir. Professor Le Gasca alone perceived and approved of the author's project.

The learned Professor had been theoretically employed in the classification and scientific examination of wheat as a plant, in the research and consideration of all its varieties; but it had escaped him to consider it in its properties, with relation to the good of man.—This practical view the author took of it, and he determined to attempt to discover which were the most farinaceous and productive varieties, by comparing their character and produce one with another.

From the foregoing observations we will arrive at the following conclusion, viz.—That the wheat in this country is much mixed, and therefore is rendered less productive than a variety or varieties with distinct characters, distinguished for their suitability for our different soils and climates, and the practicability of obtaining such varieties is clearly demonstrated in the practice of Colonel Le Couteur. Also, that when we procure a pure and suitable variety of seed wheat it is absolutely necessary to guard against the admixture, and that this can only be accomplished by unremitting care and attention.

It will further be observed, that it is not enough to select varieties that may appear valuable in the eye of the botanist, but that they must be tested and proved by actual experiment before their merits and qualities can be properly appreciated or understood, and that in fact the want of these practical tests have hitherto proved the root of all the evil.

Lastly, although Colonel Le Couteur has directed his experiments solely to wheat, yet sufficient is known to render it probable that the different seeds and roots at present in cultivation in this country would be susceptible of a like improvement, if subjected to a similar process and the test of experiment.

A SCOTCH FARMER.

On the Nature and Properties of Lime.

Sir H. Davy says, that "quick lime (hydrate of lime) in the pure state, is injurious to plants; that when mixed with moist fibrous vegetable matter, there is a strong action between the lime and the vegetable, and they form a kind of compost of which a part is usually soluble in water; but that carbonate of lime is a useful ingredient in soil, that it acts upon the decomposing vegetable and animal matter in the soil, so as to render it more fitted for the purposes of vegetation, that it prevents the two rapid decomposition of substance already dissolved, but has no tendency to form soluble matter."

Quick lime is a combination of lime with one-third of its weight of water, in which state it is called hydrate of lime; when it is exposed to the atmosphere a sufficient time it reabsorbs from the atmosphere the carbonic acid gas which it lost during the process of burning, and in this state it resumes all the properties it had before it was burnt. This effect is soon produced after it has been slaked and spread on the land in a dry state, and it has very little time in its caustic state of quick lime to effect any alteration on the soil; it must therefore be in its original carbonaceous comminuted state when intimately mixed with the soil, that it can have any effect either on the soil or on the decaying vegetable matter therein.

The effect which it produces on the soil must therefore be as an alternative in changing its texture by the addition of so much carbonate of lime to it in a very finely divided state.

Dr. Anderson and Du Hamel are of the opinion that powdered marble or powdered limestone has a good effect on grass land.

Anderson says, "that lime is no sooner slaked than it immediately begins to absorb its air and return to its former mild state; or in other words, it becomes effete, in which state it possesses the same chemical qualities in every respect as limestone.

"If this be spread out thinly upon the surface of the earth, it absorbs its air in a very short time. A few hours in this situation, restores a large proportion of its air; and in a day or two, at most, it becomes perfectly effete, as masons experience when they sweep together the scattered particles that have lain around their heaps of lime and attempt to use it in mortar by itself, for it is then no more coherent than sand or moistened earth.

"Hence then it must follow, that in every case, lime is converted into the same state with limestone, in a few days after it is mixed with the soil; so that if it produces any effect at all as lime, as a saline substance, it must only be at the very first, when it is applied, and it must act ever afterwards merely as powdered limestone.

"But it is well known, that lime produces scarcely

any sensible effect as a manure, at the beginning. Even the first year after it is applied to the soil its effects are inconsiderable, in comparison of what it produces in the second and succeeding years. From whence we must conclude, that it operates upon the soil, merely as a mild calcareous earth; and that its calcination is of no farther utility in preparing it for manure, than as a cheap and efficacious method of reducing the limestone to a fine powder." Other chemists say that it requires exposure to the atmosphere for a considerable time to render it completely effete, or to receive its full quantity of carbonic acid gas. Kames, Young, Brown, and others say, that long experience has convinced them that lime is as efficacious in its effete as in its caustic state, and Kames thinks it produces little effect on vegetables till it becomes effete; it therefore appears not only from their opinion, but also from the appearance of practical farmers, that the efficacy of lime on some land does not arise from any effect it may produce when in a caustic state, but from those qualities which it possesses in common with all other calcareous matter. It must be evident that lime, in a dry, slaked, or pulverized state, can be more easily and intimately mixed with the soil, than when it becomes wet, and in a state like mortar.

Is lime only a stimulant exerting its influence on something that is already in the soil? and if so, does its influence tend to exhaust this something? or, is it an enriching manure which gives nourishment to plants? or does it, by becoming a portion of the soil, improve its texture and composition by making the soil more capable of supplying the food necessary for the production of vegetables? Dr. Anderson says, "Writers on agriculture have been long in the custom of dividing manure into two classes; viz. enriching manures, or those that tended directly to render the soil more prolific, however sterile it may be. Among the foremost of which was reckoned dung, and exciting manures, or those that were supposed to have a tendency to render the soil more prolific, merely by acting upon those enriching manures that had been formerly in the soil, and giving them a new stimulus, so as to enable them to operate anew upon that soil, which they had formerly fertilized, in which class of stimulating manures, lime was always allowed to hold the foremost rank."

"In consequence of this theory, it would follow that lime could only be of use as a manure, when applied to rich soils; and, when applied to poor soils, would produce hardly any, or even perhaps hurtful effects." "I will frankly acknowledge, that I myself was so far imposed upon by the beauty of this theory, as to be hurried along with the general current of mankind, in the firm persuasion of the truth of this observation; and for many years did not sufficiently advert to those facts that were daily occurring to contradict this theory. I am now, however, firmly convinced, from repeated observations, that lime and other calcareous manures, produce a much greater proportional improvement upon poor soils, than on such as are richer; and that lime alone, upon a poor soil, will, in many cases, produce a much greater and more lasting degree of fertility than dung alone.

"In direct contradiction to the theory, I must add, that I never yet met with a poor soil in its natural state which was not benefited in a very great degree by calcareous matters when administered in proper quantities.

"But I have met with several rich soils that were fully impregnated with dung, and therefore exactly in that state in which the theory supposes that lime would produce the greatest effect,—but upon which lime, applied in any quantities, produced not the smallest sensible effect."

And again, in another place he says:—"I have often heard it urged, as an objection to the use of lime as a manure, that although it does indeed promote the fertility of a soil, in a higher degree at first, yet, in the end, it renders it much more sterile than formerly.

"This, like many other objections to useful practices takes its rise entirely from the avarice and unskillfulness of those who complain. It is chiefly heard of in those part of the country, where it is not uncommon for a farmer, after once liming a poor soil, to take fifteen or sixteen crops of oats successively, without any other dressing or alternation of crops. It must be a good manure that enables these soils to produce such a number of successive scouring crops of any sort; but it would be a marvellous one indeed, if it should prevent those fields from being exhausted by them.

"But is it not well known, that in all the richest and best improved parts of the country, lime has been long employed as a manure?—yet so far are these soils from being rendered sterile by it, that it is doubtful if any art, without the assistance of lime or some calcareous matter, could ever have brought these fields to their present degree of fertility. Those, therefore, who complain of the hurtful effects of lime as manure, proclaim what they ought to conceal, that they have had in their possession a treasure, which might have enriched their posterity, but which they have idly squandered away in their own lifetime." Although lime produces a great effect on certain poor land which has been in a state of nature, yet where lime is applied to poor worn out arable land which has been limed and exhausted by severe cropping, it has, from practical experience, no effect whatever.

If lime be a stimulant, there are roots in the soil of poor land in a state of nature for it to act upon; but in poor worn out land exhausted by severe cropping, there are none.

Again, such worn out land may, from the very circumstance of its worn out state, be so loosened, that an ap-

plication of lime may, as an ingredient in the composition thereof, only tend to increase the evil by making it more loose and friable. Brown says, "It is sufficiently understood, that land which has been long in grass contains much vegetable matter, and that the trouble and expense of liming it would be amply repaid to the cultivator; but the propriety of applying lime on old arable lands, has been questioned, and with much justice, by the most part of practical agriculturists, and their doubts on that head are confirmed by the fullest experience."

"Were lime a manure, it would be a noble substance, for enriching and restoring fertility to lands worn out by a succession of corn crops; but as worn out land is not restored to fertility by the application of lime, we are warranted to consider it in a different light; or, in other words, as an article to bring certain principles into action, previously possessed by the soil. This conclusion is sanctioned by experience; and experience is a far better guide than the most plausible theory."

"When lime duly operates, the whole powers of the soil are put in a state of requisition, and may be forced to act till the very soul of vegetation is extracted. It is scarcely practicable to restore fertility to land, even to the best natural quality, which has been thus abused; at least, a considerable period must elapse before it can be restored to its original fertility; but thin moorish soils after being exhausted by lime, are not to be restored. To lime them a second time, is not only a useless expenditure of labor and money, but also productive of serious mischief. Soils of this description, after a second liming, are apt to singe and burn the grain that is sown upon them; and, even when dunged, not to make such a return as would have been rendered under different circumstances."

"Lime has been long applied by British husbandmen, as a stimulus to the soil; and in consequence of such an application, luxuriant crops have been produced even upon soils of apparently inferior quality, and which would have yielded crops of trifling value had this auxiliary been withheld. In fact, the majority of soils cannot be cultivated with advantage till they are dressed with lime; and whether considered as an alternative, or as a stimulant, or as a manure, it will be found to be the basis of good husbandry, and of more use than all the other manures put together. Wherever lime has been properly applied, it has constantly been found to prove as much superior to dung, as dung is to the rakings of the roads, or the produce of a peat mine."

"From a pretty long experience, and considerable attention to the operation of lime, we are inclined to think that it acts both as an alternative and as a stimulant; operating in the one case as a medicine that changes the nature of the soil, and in the other as arousing or bringing into action the vegetable powers contained in the soil, which without such an application would have remained dormant and inactive. These opinions, we know are different from those maintained by several ingenious men, but they are supported by the result of numerous trials, undertaken to ascertain how and in what measure lime operated upon the soil."

"It is evident that lime, when applied to land in however small quantities, will tend to change its texture; and when there is vegetable matter in the soil, it may produce a greater decomposing disposition in it than before. In this case, it will act as a stimulant, hastening the decay of vegetable matter, and thereby furnishing the elements of vegetable life. Lime also acts powerfully on an iron matter in the soil, and on the gravel sands, and clay soils of the diluvial formation; and on the soil of the plastic clay, the new and old red sandstone, and the basaltic formation, the effect produced by the application of lime is very great. This may be owing, as we have said before, to neutralizing the pernicious effects of the sulphate of iron, and converting it into a useful soil; and every fresh application of lime may therefore convert an additional portion of sulphate or oxide of iron into an additional portion of good and useful soil. When there is a deficiency of carbonaceous matter in the soil, a fresh portion of lime must increase the productive powers of the soil."

"The effects which lime, as an alternative, has on the soil, must depend in a great measure on the composition of that article, and also on the composition of the soil to which it is to be applied; for the composition of the various limestone formations, and also the chalk and marls, vary greatly. The nature of the ingredients being different, the lime from the silicious limestone contains a considerable portion of silicious particles, and may answer best on strong clay soils, as it will furnish both silicious and calcareous matter to the clay soil, and the lime burnt from the lias limestone, which contains a considerable portion of clay, will produce the best effect on light sandy soils. But there are some soils on which lime when applied, has never produced any beneficial effect. This is the case with the soil on the oolitic formations, and other calcareous soils. This is evidently owing to the superabundance of lime already in the soil, so that an addition of calcareous matter only increases the evil; but where there is no calcareous matter in the soil, and also a great quantity of iron, as is the case in the soil of the new red sandstone formation, the lime has an increased effect on every fresh application. This is so well known in the neighborhood of Taunton in Somersetshire, and over all the soil of the new red sandstone, that the farmers lime their land every time it comes in course of fallow for turnips, and this produces excellent crops even without dung."

"It is most astonishing that writers on agriculture have retained an opinion, that quick lime, when mixed in a

mass of earth containing the live roots and seeds of weeds, will destroy them. Any attempt of this kind will meet with a complete failure; for the roots and the seeds of weeds cannot be destroyed by the fermentation or any heat that can be produced in such a compost.—The same writers have also stated that lime hastens the decay of vegetable matter; whereas the fact is, that it retards the process of the decomposition of vegetable matter. If straw of long dung be mixed with slaked lime, it will be preserved, while if mixed with an equal portion of earth, the earth will hasten its decay."

"It has been shown that although vegetables are composed of mucilage, starch, sugar, albumen, gluten and various other substances, yet all of them are reducible into carbon, oxygen, and hydrogen; and that water and air are composed of these substances;—that vegetable and animal manures are decomposed into the same elements, as those of water and air;—that any of the simple minerals which compose the surface of the earth, when unmixed with any other mineral, are unfit for the growth of vegetables; but that when these simple materials are intimately mixed together, that this compound when exposed to the influence of the sun and atmosphere, produces an abundant crop;—that there is no process going on at the surface of the earth amongst the materials which compose the cultivated soil which changes any of the mineral component parts of it into a new substance; that none of the materials composing the soil, enter into the composition of the plants;—and that the application of manure does not always cause productiveness in soils.—Morton on Soils."

Agriculture.

The following statement of the comparative modes of farming in England and America, is extracted from that amusing publication, *The Clockmaker*:—"The bane of this country, Squire, and, indeed, of all America, is having too much land; they run over more ground than they can cultivate, and crop the land so severely that they run it out. A very large portion of land in America has been run out by repeated grain crops; and when you add that to land naturally too poor to bear grain, or too broken for cultivation, you will find this great country in a fair way to be ruined. The state of Vermont has nothin' like the exports it used to have; and a plaguy sight of the young folks came down to Boston to hire out as helps. The two Carolinas and Virginia are covered with places that have been given up as ruined, and many other states. We haven't the surplus of wheat and grain we used to have in the United States, and it never will be so plenty again. That's the reason you hear of folk's clearin' land, makin' a farm, and sellin' off again, and goin' further into the bush. They've exhausted it, and find it easier to clear new lands than to restore the old. A great deal of Nova Scotia is run out: and if it war'n't for the lime, marsh-mud, sea weed, salt sand and what not, they've got here in such quantities, there'd be no cure for it—it takes good farmin' to keep an upland location in order, I tell you, and make it sustain itself. It takes more to fetch a farm too that's had the gizzard taken out of it than it's worth. It actily frightens me when I think your agriculture in Britain is progressin' and the land better tilled every day, while thousands upon thousands of acres with us are turned into barrens. No traveller as I've seed have noticed this, and our folks are not aware of it themselves to the extent of the evil. Squire, you and I wont live to see it; but, if this awful robbin' of prosperity goes on for another century as it has progressed for the last hundred years, we'll be a nation of paupers. Very little land in America, even of the best, will carry more than one crop of wheat arter its cleared afore it wants manure; and where its cleared so fast, where's the manure to come from, it puzzles me? (and I won't turn my back on any man in the farmin' line;) the Lord knows, for I don't; but if there's a thing that scares me it is this. * * * Yes, too much land is the ruin of us all at this side of the water. Afore I went to England I used to think that the onequal divisions of property there, and the system of landlord and tenant, was a curse to the country; and that there was more dignity and freedom to the individual and more benefit to the nation, for every man to own the land he cultivated, as with us. But I've changed my mind; I see it's the cause of the high state of cultivation in England, and the prosperity of its agriculture. If the great men had the lands in their own hands there, every now and then an improvident one would skin the soil and run it out; bein' let to others, he can't do it himself, and he takes plaguy good care by his lease his tenant shan't do it neither. Well, then, there he his, with his capital to make great improvements, substantial repairs, and so on, and things are pushed up to perfection."

Young Men's Department.

Self-Culture.

BY W. E. CHANNING, D.D.

(Continued.)

I proceed to another important means of self-culture, and this is the control of the animal appetites. To raise the moral and intellectual nature, we must put down the animal. Sensuality is the abyss in which very many souls are plunged and lost. Among the most prosperous classes, what a vast amount of intellectual life is drowned in luxurious excesses. It is the great curse of wealth, that it is used to pamper the senses; and among the poorer classes, though luxury is wanting, yet a gross feeding often prevails, under which the spirit is whelm-

ed. It is a sad sight to walk through our streets, and to see how many countenances bear marks of a lethargy and a brutal coarseness, induced by unrestrained indulgence. Whoever would cultivate the soul, must restrain the appetite. I am not an advocate for the doctrine, that animal food was not meant for man; but that this is used among us to excess, that as a people we should gain much in cheerfulness, activity, and buoyancy of mind, by less gross and stimulating food, I am strongly inclined to believe. Above all, let me urge on those, who would bring out and elevate their higher nature, to abstain from the use of spirituous liquors. This bad habit is distinguished from all others by the ravages it makes on the reason, the intellect; and this effect is produced to a mournful extent, even when drunkenness is escaped. Not a few men, called temperate, and who have thought themselves such, have learned, on abstaining from the use of ardent spirits, that for years their minds had been clouded, impaired by moderate drinking, without their suspecting the injury. Multitudes in this city are bereft of half their intellectual energy, by a degree of indulgence which passes for innocence. Of all the foes of the working class, this is the deadliest. Nothing has done more to keep down this class, to destroy their self-respect, to rob them of their just influence in the community, to render profitless the means of improvement within their reach, than the use of ardent spirits as a drink. They are called on to withstand this practice, as they regard their honor, and would take their just place in society. They are under solemn obligations to give their sanction to every effort for its suppression. They ought to regard as their worst enemies, (though unintentionally such,) as the enemies of their rights, dignity, and influence, the men who desire to flood city and country with distilled poison. I lately visited a flourishing village, and on expressing to one of the respected inhabitants the pleasure I felt in witnessing so many signs of progress, he replied, that one of the causes of the prosperity I witnessed, was the disuse of ardent spirits by the people. And this reformation we may be assured wrought something higher than outward prosperity. In almost every family so improved, we cannot doubt that the capacities of the parent for intellectual and moral improvement were enlarged, and the means of education made more effectual to the child. I call on working men to take hold of the cause of temperance as peculiarly their cause. These remarks are the more needed, in consequence of the efforts made far and wide, to annul at the present moment a recent law for the suppression of the sale of ardent spirits in such quantities as favor intemperance. I know, that there are intelligent and good men, who believe, that in enacting this law, government transcended its limits, left its true path, and established a precedent for legislative interference with all our pursuits and pleasures. No one here looks more jealously on government than myself. But I maintain, that this is a case which stands by itself, which can be confounded with no other, and on which government from its very nature and end is peculiarly bound to act. Let it never be forgotten, that the great end of government, its highest functions, is, not to make roads, grant charters, originate improvements, but to prevent or repress crimes against individual rights and social order. For this end it ordains a penal code, erects prisons, and inflicts fearful punishments. Now if it be true, that a vast proportion of the crimes, which government is instituted to prevent and repress, have their origin in the use of ardent spirits; if our poor-houses, work-houses, jails and penitentiaries are tenanted in a great degree by those, whose first and chief impulse to crime came from the distillery and dram-shop; if murder and theft, the most fearful outrages on property and life, are most frequently the issues and consummation of intemperance, is not government bound to restrain by legislation the vending of the stimulus to these terrible social wrongs? Is government never to act as a parent, never to remove the causes or occasions of wrong doing? Has it but one instrument for repressing crime, namely, public, infamous punishment, an evil only inferior to crime? Is government a usurper, does it wander beyond its sphere, by imposing restraints on an article, which does no imaginable good, which can plead no benefit conferred on body or mind, which unfits the citizen for the discharge of his duty to his country, and which, above all, stirs up men to the perpetration of most of the crimes, from which it is the highest and most solemn office of government to protect society?

I come now to another important measure of self-culture, and this is, intercourse with superior minds. I have insisted on our own activity as essential to our progress, but we were not made to live or advance alone. Society is as needful to us as air or food. A child doomed to utter loneliness, growing up without sight or sound of human beings, would not put forth equal power with many brutes; and a man, never brought into contact with minds superior to his own, will probably run one and the same dull round of thought and action to the end of life.

It is chiefly through books that we enjoy intercourse with superior minds, and these invaluable means of communication are in the reach of all. In the best books, great men talk to us, give us their most precious thoughts, and pour their souls into ours. God be thanked for books. They are the voices of the distant and the dead, and make us heirs of the spiritual life of past ages. Books are the true levellers. They give to all, who will faithfully use them, the society, the spiritual presence of the best and greatest of our race. No matter how poor I am. No matter though the prosperous

of my own time will not enter my obscure dwelling. If the sacred writers will enter and take up their abode under my roof, if Milton will cross my threshold to sing to me of Paradise, and Shakespeare to open to me the worlds of imagination and the workings of the human heart, and Franklin to enrich me with his practical wisdom, I shall not pine for want of intellectual companionship, and I may become a cultivated man though excluded from what is called the best society in the place where I live.

To make this means of culture effectual, a man must select good books, such as have been written by right-minded and strong-minded men, real thinkers, who instead of diluting by repetition what others say, have something to say for themselves, and write to give relief to full earnest souls; and these works must not be skimmed over for amusement, but read with fixed attention and a reverential love of truth. In selecting books, we may be aided much by those who have studied more than ourselves. But, after all, it is best to be determined in this particular a good deal by our own tastes.—The best books for a man are not always those which the wise recommend, but oftener those which meet the peculiar wants, the natural thirst of his mind, and therefore awaken interest and rivet thought. And here it may be well to observe, not only in regard to books but in other respects, that self-culture must vary with the individual. All means do not equally suit us all. A man must unfold himself freely, and should respect the peculiar gifts or biases by which nature has distinguished him from others. Self-culture does not demand the sacrifice of individuality. It does not regularly apply an established machinery, for the sake of torturing every man into one rigid shape called perfection. As the human countenance, with the same features in us all, is diversified without end in the race, and is never the same in any two individuals, so the human soul, with the same grand powers and laws, expands into an infinite variety of forms, and would be woefully stunted by modes of culture requiring all men to learn the same lesson or to bend to the same rules.

I know how hard it is to some men, especially to those who spend much time in manual labor, to fix attention on books. Let them strive to overcome the difficulty, by choosing subjects of deep interest, or by reading in company with those whom they love. Nothing can supply the place of books. They are cheering or soothing companions in solitude, illness, affliction. The wealth of both continents would be no equivalent for the good they impart. Let every man, if possible, gather some good books under his roof, and obtain access for himself and family to some local library. Almost any luxury should be sacrificed to this.

One of the very interesting features of our times, is the multiplication of books, and their distribution through all conditions of society. At a small expense, a man can now possess himself of the most precious treasures of English literature. Books, once confined to a few by their costliness, are now accessible to the multitude; and in this way a change of habits is going on in society, highly favorable to the culture of the people. Instead of depending on casual rumor and loose conversation for most of their knowledge and objects of thought; instead of forming their judgments in crowds, and receiving their chief excitement from the voice of neighbors, men are now learning to study and reflect alone, to follow out subjects continuously, to determine for themselves what shall engage their minds, and to call to their aid the knowledge, original views, and reasonings of men of all countries and ages; and the results must be, a deliberateness and independence of judgment, and a thoroughness and extent of information, unknown in former times. The diffusion of these silent teachers, books, through the whole community, is to work greater effects than artillery, machinery, and legislation. Its peaceful agency is to supersede stormy revolutions. The culture, which it is to spread, whilst an unspeakable good to the individual, is also to become the stability of nations.

Another important means of self-culture, is to free ourselves from the power of human opinion and example, except as far as this is sanctioned by our own deliberate judgment. We are all prone to keep the level of those we live with, to repeat their words, and dress our minds as well as bodies after their fashion; and hence the spiritless tameness of our characters and lives.—Our greatest danger, is not from the grossly wicked around us, but from the worldly, unreflecting multitude, who are borne along as a stream by foreign impulse, and bear us along with them. Even the influence of superior minds may harm us, by bowing us to servile acquiescence and damping our spiritual activity. The great use of intercourse with other minds, is to stir up our own, to whet our appetite for truth, to carry our thoughts beyond their old tracks. We need connexions with greater thinkers to make us thinkers too. One of the chief arts of self-culture, is to unite the childlike teachableness, which gratefully welcomes light from every human being who can give it, with manly resistance of opinions however current, of influences however generally revered, which do not approve themselves to our deliberate judgment. You ought indeed patiently and conscientiously to strengthen your reason by other men's intelligence, but you must not prostrate it before them. Especially if there springs up within you any view of God's word or universe, any sentiment or aspiration, which seems to you of a higher order than what you meet abroad, give reverent heed to it; inquire into it earnestly, solemnly. Do not trust it blindly, for it may be an illusion; but it may be the Divinity moving

within you, a new revelation, not supernatural but still most precious, of truth or duty; and if after inquiry it so appear, then let no clamor, or scorn, or desertion turn you from it. Be true to your own highest convictions. Intimations from our own souls of something more perfect than others teach, if faithfully followed, give us a consciousness of spiritual force and progress, never experienced by the vulgar of high life or low life, who march, as they are drilled, to the step of their times.

Some, I know, will wonder, that I should think the mass of the people capable of such intimations and glimpses of truth, as I have just supposed. These are commonly thought to be the prerogative of men of genius, who seem to be born to give law to the minds of the multitude. Undoubtedly nature has her nobility, and sends forth a few to be eminently "lights of the world." But it is also true that a portion of the same divine fire is given to all; for the many could not receive with a loving reverence the quickening influences of the few, were there not essentially the same spiritual life in both.—The minds of the multitude are not masses of passive matter, created to receive impressions unresistingly from abroad. They are not wholly shaped by foreign instruction; but have a native force, a spring of thought in themselves. Even the child's mind outruns its lessons, and overflows in questionings which bring the wisest to a stand. Even the child starts the great problems, which philosophy has labored to solve for ages. But on this subject I cannot now enlarge. Let me only say, that the power of original thought is particularly manifested in those, who thirst for progress, who are bent on unfolding their whole nature. A man who wakes up to the consciousness of having been created for progress and perfection, looks with new eyes on himself and on the world in which he lives. This great truth stirs the soul from its depths, breaks up old associations of ideas, and establishes new ones, just as a mighty agent of chemistry, brought into contact with natural substances, dissolves the old affinities which had bound their particles together, and arranges them anew. This truth particularly aids us to penetrate the mysteries of human life. By revealing to us the end of our being, it helps us to comprehend more and more the wonderful, the infinite system, to which we belong. A man in the common walks of life, who has faith in perfection, in the unfolding of the human spirit, as the great purpose of God, possesses more the secret of the universe, perceives more the harmonies or mutual adaptations of the world without and the world within him, is a wiser interpreter of Providence, and reads nobler lessons of duty in the events which pass before him, than the profoundest philosopher who wants this grand central truth. Thus illuminations, inward suggestions, are not confined to a favored few, but visit all who devote themselves to a generous self-culture.

Another means of self-culture may be found by every man in his condition or occupation, be it what it may. Had I time, I might go through all conditions of life, from the most conspicuous to the most obscure, and might show how each furnishes continual aids to improvement. But I will take one example, and that is, of a man living by manual labor. This may be made the means of self-culture. For instance, in almost all labor, a man exchanges his strength for an equivalent in the form of wages, purchase-money, or some other product. In other words, labor is a system of contracts, bargains, imposing mutual obligations. Now the man, who, in working, no matter in what way, strives perpetually to fulfil his obligations thoroughly, to do his whole work faithfully, to be honest not because honesty is the best policy, but for the sake of justice, and that he may render to every man his due, such a laborer is continually building up in himself one of the greatest principles of morality and religion. Every blow on the anvil, on the earth, or whatever material he works upon, contributes something to the perfection of his nature.

Nor is this all. Labor is a school of benevolence as well as justice. A man to support himself must serve others. He must do or produce something for their comfort or gratification. This is one of the beautiful ordinations of Providence, that, to get a living, a man must be useful. Now this usefulness ought to be an end in his labor as truly as to earn his living. He ought to think of the benefit of those he works for, as well as of his own; and in so doing, in desiring amidst his sweat and toil to serve others as well as himself, he is exercising and growing in benevolence, as truly as if he were distributing bounty with a large hand to the poor. Such a motive hallows and dignifies the commonest pursuit. It is strange, that laboring men do not think more of the vast usefulness of their toils, and take a benevolent pleasure in them on this account. This beautiful city, with its houses, furniture, markets, public walks, and numberless accommodations, has grown up under the hands of artisans and other laborers, and ought they not to take a disinterested joy in their work? One would think, that a carpenter or mason, on passing a house which he had reared, would say to himself, "this work of mine is giving comfort and enjoyment every day and hour to a family, and will continue to be a kindly shelter, a domestic gathering-place, an abode of affection, for a century or more after I sleep in the dust;" and ought not a generous satisfaction to spring up at the thought? It is by thus interweaving goodness with common labors, that we give it strength and make it a habit of the soul.

There is one circumstance attending all conditions of life, which may and ought to be turned to the use of self-culture. Every condition, be it what it may, has hardships, hazards, pains. We try to escape them; we pine

for a sheltered lot, for a smooth path, for cheering friends, and unbroken success. But Providence ordains storms, disasters, hostilities, sufferings; and the great question, whether we shall live to any purpose or not, whether we shall grow strong in mind and heart, or be weak and pitiable, depends on nothing so much as on our use of these adverse circumstances. Outward evils are designed to school our passions, and to rouse our faculties and virtues into intenser action. Sometimes they seem to create new powers. Difficulty is the element, and resistance the true work of a man. Self-culture never goes on so fast, as when embarrassed circumstances, the opposition of men or the elements, unexpected changes of the times, or other forms of suffering, instead of disheartening, throw us on our inward resources, turn us for strength to God, clear up to us the great purpose of life, and inspire calm resolution. No greatness or goodness is worth much, unless tried in these fires.—Hardships are not on this account to be sought for. They come fast enough of themselves, and we are in more danger of sinking under, than of needing them. But when God sends them, they are noble means of self-culture, and as such, let us meet and bear them cheerfully. Thus all parts of our condition may be pressed into the service of self-improvement.

I have time to consider but one more means of self-culture. We find it in our Free Government, in our Political relations and duties. It is a great benefit of free institutions, that they do much to awaken and keep in action a nation's mind. We are told, that the education of the multitude is necessary to the support of a republic; but it is equally true, that a republic is a powerful means of educating the multitude. It is the people's University. In a free state, solemn responsibilities are imposed on every citizen; great subjects are to be discussed; great interests to be decided. The individual is called to determine measures affecting the well-being of millions and the destinies of posterity. He must consider not only the internal relations of his native land, but its connexion with foreign states, and judge of a policy which touches the whole civilized world. He is called by his participation in the national sovereignty, to cherish public spirit, a regard to the general weal. A man who purposes to discharge faithfully these obligations, is carrying on a generous self-culture. The great public questions, which divide opinion around him and provoke earnest discussion, of necessity invigorate his intellect, and accustom him to look beyond himself. He grows up to a robustness, force, enlargement of mind, unknown under despotic rule.

It may be said that I am describing what free institutions ought to do for the character of the individual, not their actual effects; and the objection, I must own, is too true. Our institutions do not cultivate us, as they might and should; and the chief cause of the failure is plain. It is the strength of party spirit; and so blighting is its influence, so fatal to self-culture, that I feel myself bound to warn every man against it, who has any desire of improvement. I do not tell you it will destroy your country. It wages a worse war against yourselves. Truth, justice, candor, fair dealing, sound judgment, self-control, and kind affections are its natural and perpetual prey.

I do not say, that you must take no side in politics. The parties which prevail around you differ in character, principles, and spirit, though far less than the exaggeration of passion affirms; and, as far as conscience allows, a man should support that, which he thinks best. In one respect, however, all parties agree. They all foster that pestilential spirit, which I now condemn. In all of them, party spirit reigns. Associate men together for a common cause, be it good or bad, and array against them a body resolutely pledged to an opposite interest, and a new passion, quite distinct from the original sentiment which brought them together, a fierce fiery zeal, consisting chiefly of aversion to those who differ from them, is roused within them into fearful activity. Human nature seems incapable of a stronger, more unrelenting passion. It is hard enough for an individual, when contending all alone for an interest or an opinion, to keep down his pride, wilfulness, love of victory, anger and other personal feelings. But let him join a multitude in the same warfare, and, without singular self-control, he receives into his single breast the vehemence, obstinacy and vindictiveness of all: The triumph of his party becomes immeasurably dearer to him than the principle, true or false, which was the original ground of division. The conflict becomes a struggle not for principle but for power, for victory; and the desperation, the wickedness of such struggles, is the great burden of history. In truth, it matters little what men divide about, whether it be a foot of land or precedence in a procession. Let them but begin to fight for it, and self-will, ill-will, the rage for victory, the dread of mortification and defeat, make the trifle as weighty as a matter of life and death. The Greek or Eastern empire was shaken to its foundation by parties, which differed only about the merits of charioteers at the amphitheatre. Party spirit is singularly hostile to moral independence. A man, in proportion as he drinks into it, sees, hears, judges by the senses and understandings of his party. He surrenders the freedom of a man, the right of using and speaking his own mind, and echoes the applauses or maledictions, with which the leaders or passionate partisans see fit that the country should ring. On all points parties are to be distrusted; but on no one so much as on the character of opponents. These, if you may trust what you hear, are always men without principle or truth, devoured by selfishness, and thirsting for their own elevation, though on their coun-

try's ruin. When I was young, I was accustomed to hear pronounced with abhorrence, almost with execration, the names of men, who are now hailed by their former foes as the champions of grand principles and as worthy of the highest public trusts. This lesson of early experience, which later years have corroborated, will never be forgotten.

Of our present political divisions I have of course nothing to say. But among the current topics of party, there are certain accusations and recriminations, grounded on differences of social condition, which seems to me so unfriendly to the improvement of individuals and the community, that I ask the privilege of giving them a moment's notice. On one side we are told, that the rich are disposed to trample on the poor; and on the other, that the poor look with evil eye and hostile purpose on the possessions of the rich. These outcries seem to me alike devoid of truth and alike demoralizing. As for the rich, who constitute but a handful of our population, who possess not one peculiar privilege, and, what is more, who possess comparatively little of the property of the country, it is wonderful, that they should be objects of alarm. The vast and ever-growing property of this country, where is it? Locked up in a few hands? hoarded in a few strong boxes? It is diffused like the atmosphere, and almost as variable, changing hands with the seasons, shifting from rich to poor, not by the violence but by the industry and skill of the latter class. The wealth of the rich is as a drop in the ocean; and it is a well known fact, that those men among us, who are noted for their opulence, exert hardly any political power on the community. That the rich do their whole duty; that they adopt the great object of the social state, which is the elevation of the people in intelligence, character, and condition, cannot be pretended; but that they feel for the physical sufferings of their brethren, that they stretch out liberal hands for the succor of the poor and for the support of useful public institutions, cannot be denied. Among them are admirable specimens of humanity. There is no warrant for holding them up to suspicion as the people's foes.

Nor do I regard as less calumnious the outcry against the working classes, as if they were aiming at the subversion of property. When we think of the general condition and character of this part of our population, when we recollect, that they were born and have lived amidst schools and churches, that they have been brought up to profitable industry, that they enjoy many of the accommodations of life, that most of them hold a measure of property and are hoping for more, that they possess unprecedented means of bettering their lot, that they are bound to comfortable homes by strong domestic affections, that they are able to give their children an education which places within their reach the prizes of the social state, that they are trained to the habits, and familiarized to the advantages of a high civilization; when we recollect these things, can we imagine that they are so insanely blind to their interests, so deaf to the calls of justice and religion, so profligately thoughtless of the peace and safety of their families, as to be prepared to make a wreck of social order, for the sake of dividing among themselves the spoils of the rich, which would not support the community for a month. Undoubtedly there is insecurity in all stages of society, and so there must be, until communities shall be regenerated by a higher culture, reaching and quickening all classes of the people; but there is not, I believe, a spot on earth, where property is safer than here, because, nowhere else is it so equally and righteously diffused. In aristocracies, where wealth exists in enormous masses, which have been entailed for ages by a partial legislation on a favored few, and where the multitude, after the sleep of ages, are waking up to intelligence, to self-respect, and to a knowledge of their rights, property is exposed to shocks which are not to be dreaded among ourselves. Here indeed are elsewhere, among the less prosperous members of the community, there are disappointed, desperate men, ripe for tumult and civil strife; but it is also true, that the most striking and honorable distinction of this country is to be found in the intelligence, character and condition of the great working class. To me it seems, that the great danger to property here is not from the laborer, but from those who are making haste to be rich. For example, in this commonwealth, no act has been thought by the alarmists or the conservatives so subversive of the rights of property, as a recent law, authorizing a company to construct a free bridge, in the immediate neighborhood of another, which had been chartered by a former legislature, and which had been erected in the expectation of an exclusive right. And with whom did this alleged assault on property originate? With levellers? with needy laborers? with men bent on the prostration of the rich? No; but with men of business, who were anxious to push a more lucrative trade. Again, what occurrence among us has been so suited to destroy confidence, and to stir up the people against the moneyed class, as the late criminal mismanagement of some of our banking institutions. And whence came this? from the rich or the poor? from the agrarian, or the man of business? Who, let me ask, carry on the work of spoliation most extensively in society? Is not more property wrested from its owners by rash or dishonest failures, than by professed highwaymen and thieves? Have not a few unprincipled speculators sometimes inflicted wider wrongs and sufferings, than all the tenants of a state prison? Thus property is in more danger from those who are aspiring after wealth, than from those who live by the sweat of their brow. I do not believe, however, that the institution is in serious dan-

ger from either. All the advances of society, industry, useful arts, commerce, knowledge, jurisprudence, fraternal union, and practical Christianity, are so many hedges round honestly acquired wealth, so many barriers against revolutionary violence and rapacity. Let us not torture ourselves with idle alarms, and still more let us not inflame ourselves against one another by mutual calumnies. Let not class array itself against class, where all have a common interest. One way of provoking men to crime is to suspect them of criminal designs. We do not secure our property against the poor, by accusing them of schemes of universal robbery; nor render the rich better friends of the community, by fixing on them the brand of hostility to the people. Of all parties, those founded on different social conditions are the most pernicious; and in no country on earth are they so groundless as in our own. (To be continued.)

THE N. YORK AND LONG-ISLAND SILK GROWING AND MANUFACTURING COMPANY.—This company has been formed for the purposes which its title indicates. Its capital is \$50,000, divided into shares of \$10 each, most of which having been subscribed, the company will shortly go into operation. Books of subscription for the remaining shares will be opened on and after the 30th of April, at the undermentioned places, where the prospectus may be had and every information obtained.

G. C. THORBURN, No. 11 John-street.
ALONZO WAKEMAN, office of the Am. Institute, No. 179 J. W. WEAVER & Co. No. 79 Barclay-st. [Broadway.]
N. B. Persons at a distance wishing to subscribe to the above, can do so by forwarding 20 per cent on each share, (post-paid,) to GEO. C. THORBURN, treasurer. It

WATKINS' PATENT WHEAT FANS, GRAIN CRADLES, and every other variety of tool required for harvesting, for sale by **R. SINCLAIR & Co.** Baltimore, Md. July-21

AGRICULTURAL WAREHOUSE AND SEED STORE, 79 Barclay-street, New-York. At this old established stand, the subscribers take pleasure in announcing to the public, that they have made extensive arrangements to accommodate farmers in all articles connected with husbandry, viz:—Agricultural implements, a full and fresh supply of Field and Garden Seeds, Fruit Trees, Durham Cattle, Chinese and Berkshire pigs, 10,000 morus multicaulis mulberry trees, publications on rural subjects, &c.

Published here, the Rural Library, S. Fleet, editor; a few copies of 1st vol. for sale. The object of this work is to constitute a library at the least possible expense. 2d vol. commencing with Prof. Low's Elements of Practical Agriculture, with nearly 250 fine engravings; subscription \$3. Subscriptions received for the Genesee Farmer, Cultivator, &c. July-31 J. W. WEAVER & Co. 79 Barclay-st. N.Y.

THOROUGH-BRED IMPROVED SHORT-HORN CATTLE.—The subscriber has recently taken charge of the superior stock of Short-Horn Cattle, bred by L. F. Allen, Esq. on his farm at Grand-Island, in the Niagara river. The original stock from which these have been produced, were selected from among the best animals in the country, and several of them were imported direct from England. As a milking stock, the cows of this herd will challenge competition with those of any other in the United States, several of them being extraordinary milkers, and all of them good. For the making of butter, they have been thoroughly tested, and their dairy excellence is remarkable. Their value in this particular, is fully sustained in the grade animals descended from the bulls of this herd, which have, thus far, without exception, proved the best of milkers. This excellence, possessed in reality by no cow so much as in the pure Short-Horn, has been too much neglected by both English and American breeders, and their value as a dairy stock thus underrated.

In addition to the above, are a select herd of DEVON SHORT-HORNS, bred from two choice pure Devon cows, directly descended from the celebrated herd of Mr. Coke, of Holkham, Eng. These beautiful animals are a cross of different degrees with the pure "Improved Short-Horns," without any admixture of common blood; and are as perfect combinations of excellence in color, hardihood, symmetry and size as can be found.

As the present herd, of all ages, has now attained the number desirable to be kept on the farm, (upwards of forty,) a part of them are offered for sale. Application may be made either personally or by letter, (post-paid,) to SAMUEL ALLEN, Esq. at Black-Rock, N. Y. or to the subscriber on the farm, five miles below, at which a ferry connects with the main shore, on the Erie canal. LEWIS G. COLLINS. Grand-Island, May 15, 1839.

P. S. A few fine grade animals also for sale. jif.

FOR SALE—A Splendid Country Seat in the Highlands, on the Hudson River. That beautiful country residence, known by the name of the BEVERLY ESTATE, containing four hundred acres of land, about two hundred of which are fine level arable soil, of an excellent quality, in a good state of cultivation, and not surpassed by any on the river for fertility; the remainder is fine and thrifty timber land. The situation is the most eligible on the Hudson, extending one mile and a half on the river, with a bold shore and convenient dock, nearly opposite West-Point, and within fifty miles of New-York. The prospect is extensive and diversified, reaching from St. Anthony's Peak on the south, to the bay and city of Newburgh on the north. This estate can conveniently be divided into three farms, giving an equal proportion of front on the river, and of arable and timber land to each. Almost every enclosure is supplied with living springs of the purest water. There is on said estate a plain house, (formerly the head-quarters of Gen. Arnold,) also out-houses necessary to carry on the business of the farm. The single fact that during the whole time the cholera raged throughout the state, not one case occurred within ten miles of this place, is sufficient to prove the unrivalled salubrity of the situation. The facilities of intercourse with the city, that can be reached in four hours, by means of numerous steam-boats, are great, and daily increasing, both as regards pleasure, and the convenience of a near market for produce of every description.

For conditions of sale, apply to STEPHEN A. HALSEY, 139 Water-street, New-York, or RICHARD D. ARDEN, on the adjoining farm. Ardena, 23d April, 1839. j6t

FOR SALE—A splendid Farm, in the town of Hillsdale, of Columbia county, N. Y. situated 18 miles east of the city of Hudson, containing about 208 acres of first rate land, about 180 of which is fine level arable soil, of an excellent quality, in a good state of cultivation, and on a very public road from New-York to Albany, and not surpassed by any in Columbia, for fertility; the remainder in fine timber; about 30 acres of good pine and chestnut timber. This situation is the most splendid in the town of Hillsdale. The farm can conveniently be divided in to two farms, giving an equal quantity of timber land to each. There is a beautiful grove of fruit and ornamental trees about the main dwelling; also three other DWELLING-HOUSES, three Barns, besides Hay Bams and Barracks, Sheds, &c. Also, out-houses of almost every description, and in first rate order. Also—Several lots of land in the counties of Broome and Tioga. Terms of payment made to suit the purchaser. Inquire of the subscriber on the premises. July-21 BARENT WAGER, Hillsdale.

Moneys received between the 20th May and 24th June, in sums of \$5 and over. The total receipts are included from post-offices marked with an asterisk.

No. Vols.	No. Vols.
*Abbot's Mills, Ten. 11	*Long Meadow, No. 11
*Amherst C. H. Va. 11	*Lynchburgh, Va. 11
*Augusta, Geo. 48	*Lafayette, Va. 84
*Asylum, Pa. 5	*Lexington, Pa. 20
*Augusta, Ill. 5	*Lancaster, O. 5
*Brockwayville, Pa. 5	*Lake C. H. Ia. 8
*Beaufort, S.C. 5	*Little Level, Va. 5
*Bethlehem, Ia. 5	*Lafayette, Ia. 14
*Bennington, Vt. 19	*La Grange, Ala. 10
*Bardonia, Ky. 11	*Madison, Ia. 20
*Bowling Green, Ky. 5	*Manhattan, Ia. 20
*Buckhead, S.C. 5	*Middletown, Va. 22
*Boydton, Va. 22	*Monroe, Ga. 18
*Burlington, Vt. 25	*Meadville, Pa. 13
*Boston, Mass. 159	*New-Orleans, La. 12
*Bridgewater, Ct. 5	*Newark, N.J. 9
*Bell-Air, Md. 12	*New-Holland, Pa. 25
*Baltimore, Md. 103	*Newtown, Ct. 10
*Bolivar, Tenn. 5	*Newark, O. 15
*Concord, N.H. 11	*New-York City, Ky. 13
*Cincinnati, O. 21	*Nicholasville, Ky. 13
*Charles City C. H. Va. 6	*Connellsville, N.Y. 18
*Catskill, N.Y. 15	*Norwalk, N.Y. 6
*Conrad's Store, Va. 6	*Princess Ann, Md. 28
*Charlestown, Va. 28	*Pittsburg, N.Y. 33
*Clifton Park, N.Y. 6	*Pittsfield, Mass. 14
*Detroit, Mich. 24	*Pittsburg, Pa. 69
*Elmira, N.Y. 13	*Philadelphia, Pa. 152
*Elizabethtown, Ky. 11	*Petersburgh, Ga. 30
*Evansville, Ia. 5	*Rhinebeck, N.Y. 27
*Fincaisle, Va. 70	*Richmond, Va. 183
*Fort Hamilton, N.Y. 8	*Simpsonville, Ky. 22
*Frederick, Md. 35	*St. Louis, Mo. 55
*Friendship, Md. 15	*Springfield, Mass. 35
*Flushing, N.Y. 13	*Shelbyville, Ky. 20
*Fort Wayne, Ia. 5	*Sing-Sing, N.Y. 25
*Flemington, N.J. 13	*Shrewsbury, Pa. 17
*Gainesville, Ala. 5	*Suffolk, Va. 28
*Goshen, Ct. 19	*Springfield, Ill. 6
*Greensborough, Ga. 11	*Trenton, N.J. 25
*Guilford, Ct. 59	*Verona, N.Y. 5
*Hartford, R.I. 5	*Winchester Centre, Ct. 7
*Hopkinton, N.Y. 23	*Waterbury, Ct. 12
*Hudson, Va. 7	*Wellsburgh, Va. 13
*Hawesburgh, Md. 32	*Whalen's Store, N.Y. 20
*Huntingtown, Mich. 5	*Woodstock, N.Y. 5
*Highland, Ill. 5	*Williamsport, Md. 25
*Jerusalem, Va. 16	*Westport, Mo. 7
*Kingsville, Md. 6	*West Burlington, N.Y. 9
*Lewiston, N.Y. 6	*Worcester, Mass. 11

PRICE CURRENT.

ARTICLES.	Baltimore, June 21.	Philadelphia, June 22.	Roston, June 23.	New-York, June 24.
Beans, white, per bush	1 87	1 75	2 00	1 75
Beef, western, do. do.	9 00	8 00	9 00	8 00
Butter, fresh, lb.	12 11	11 11	12 11	11 11
Butter, salted, lb.	11 11	10 11	11 11	10 11
Cheese, do. do.	12 11	11 11	12 11	11 11
Cotton, best, lb.	12 11	11 11	12 11	11 11
Flour, best, lb.	12 11	11 11	12 11	11 11
GRAIN—Wheat, do. do.	6 00	6 00	6 00	6 00
Do. Rye, do. do.	4 00	4 00	4 00	4 00
Do. Oats, do. do.	3 00	3 00	3 00	3 00
Do. Corn, do. do.	2 00	2 00	2 00	2 00
Hams, pork, lb.	12 11	11 11	12 11	11 11
Pork, in hog, lb.	12 11	11 11	12 11	11 11
SEEDS—Red Clover, lb.	12 11	11 11	12 11	11 11
Timothy, do. do.	12 11	11 11	12 11	11 11
Wool—Saxony, lb.	12 11	11 11	12 11	11 11
Merino, do. do.	12 11	11 11	12 11	11 11
1-4 and com. do.	12 11	11 11	12 11	11 11
Sheep, do. do.	12 11	11 11	12 11	11 11
Cows and Calves, do.	12 11	11 11	12 11	11 11

FROM THE STEAM PRESS OF
PACKARD, VAN BENTHUYSEN & Co.